THE

# Journal of Home Economics

VOL. XIV MARCH, 1922 No. 3

## THE REFORM OF GIRLS' SCHOOLS IN AUSTRIA

MARIA MARESCH

*Austrian Ministry of Education*

For a long time the teaching of girls was the subject of discussion between two groups: one believing that girls should be trained in schools for earning their living like boys, the other that girls should be prepared only for their domestic vocation of wife and mother. The former advocated the identity of girls' and boys' schools; the latter favored girls' schools teaching home economics, history, and languages, but not mathematics and natural science, as in the Austrian system and the higher schools for girls in Germany.

Economic need, however, compelled the two groups to agree on one form of girls' school, whose aim is to prepare the girls, not only for earning a living or for their vocation as wife, mother, and housekeeper, but for both duties. No girl knows her future, and many, in addition to fulfilling the duties of wife and mother, are compelled to earn their bread and the bread of their children. The income of a man of middle class in Austria is never large enough to provide adequate nourishment for a whole family, and most girls marry now with the intention of being both worker and wife. They must be prepared for both. The few girls who will not be obliged to fulfill both duties need instruction in economics of the household, for the immense increase in prices exacts the most careful and rational use of all materials in kitchen and house. The lack of such knowledge is often the first cause of social decline, and the social decline of one person affects all people. Economic instruction is no longer a matter of individual decision; today the state must provide every girl a measure of training during the period of compulsory schooling, that is, from the seventh to the fourteenth years.

The Ministry of Public Instruction has introduced the teaching of home economics in the last class of all primary schools. In 35 half days of cookery the girls of fourteen years learn the most important methods of conservation and buying for the house, and the use of milk, eggs, fat, flour, meat, rice, potatoes, legumes, green vegetables. They are taught the composition of foods, the nutritive value, the price, and quality. In a two hour period each week the girls become familiar with materials such as clothing and furnishings, as well as with the principles of sanitation, physiology, and child hygiene. The teaching of home economics must give more than the knowledge of the operation of the house; it must show young people that cookery, sewing, and the whole technique of daily life are necessary steps in expressing the highest social instincts. It has the same importance, whether the old familiar household is to remain or the common household, of which socialists dream, is to come. That training must prepare the girls to use the results of modern progress in the home to save human energy and time and to permit them to attain other cultural ends.

These views caused the reform of the higher girls' schools also. Besides the *gymnasium* which is the same for girls and boys, there arose a new type of higher school for girls, the *Frauenschule*. The type is new, although the name has been used previously in Germany. But in Germany, *Frauenschule* is a course of only practical instruction which girls enter after the lyceum. The Austrian *Frauenschule* receives pupils in the 14th year and they remain till the 18th. Required subjects are the same ones taught in other schools of the same grade, but the method of teaching is different. Teaching in cookery, sewing, and nursing is in connection with natural science, mathematics, and all other required subjects, not in addition to them. The girls, instructed in the *Frauenschule* will be pioneers of the housekeeping of the future. Spirit and soul will dominate all technical knowledge when woman conceives the importance of her social mission, which is to strengthen and improve society by choosing wisely materials necessary for its upbuilding. Thus inanimate things will be made to react to the development of humanity.

# LAUNDERING*

LYDIA JACOBSON

*Textile Chemistry Laboratories, Iowa State College*

Laundering involves a knowledge of the chemistry of textile fibers, water, detergents, soaps, starches, bleaching agents, bluings, and dyes, as well as some knowledge of machinery and skill in managing manipulative processes. It is a subject which has received considerable scientific investigation because of both its practical and theoretical interest. The purpose of this article is to summarize results of recent investigations.

Laundering as a part of the manufacturing process has been for many years the subject of extensive research and experimentation, but not until recently has it been studied from the launderer's point of view. For the past five years the Laundry Owners National Association have maintained a fellowship at Mellon Institute of Industrial Research, University of Pittsburgh, for the purpose of improving the industry through the application of science. As a result, three charts on standard wash room practices and one on the removal of stains have been prepared by H. G. Elledge, besides a book, written in coöperation with Alice Lucile Wakefield, on "The Conservation of Textiles."[1] It contains many photomicrographs and illustrations showing that the damage suffered by fabrics in the process of being laundered is often due to the original condition of the fiber and the weave of the fabric. They emphasize the fact that the manufacturer, user, and launderer are all responsible for the length of life of a fabric.

However, a successful laundering process also depends upon a wise choice of reagents, especially of detergent and bluing, and both of these have been studied extensively.

*Soaps.* A résumé of recent experimental work, together with an explanation of the new conception of the nature of soap solution, will be found in the "Third Report on Colloid Chemistry and Its General and Industrial Applications," published by British Association for Advancement of Science. McBain, Professor of Physical Chemistry, University of Bristol, and his co-workers have established by authentic experiments that soap solutions belong to a class of colloidal electrolytes defined as

* This is the first of a series of articles dealing with recent advances in textiles and textile chemistry.

[1] Published by the Laundry Owners National Association, La Salle, Ill.

"salts in which one of the ions has been replaced by a heavily charged, heavily hydrated, ionic micelle which exhibits equivalent conductivity that is not only comparable with that of a true ion but may even amount to several times that of the simple ion from which it has been derived. In other words, this ionic micelle is a typical, very highly charged colloidal particle of great conductivity." This theory explains the seeming inconsistency exhibited by a soap solution of high conductivity in spite of low osmotic effects, and accounts for other peculiarities such as uncommonly low density and remarkable detergent action. In the light of this new conception and after a thorough survey of the literature on the subject, McBain summarizes the following factors as being important in the detergent action of soap:

1. Necessity of having soap in solution. Kraft[2] proved experimentally that the detergent action of a soap varies with its solubility and showed that stearates and palmitates being insoluble in cold water are less effective than oleates which are soluble in cold water. Jackson[3] showed also that the colloidal nature of oleates persists well into dilute solutions and therefore are the most effective soaps to use on materials which would be injured by high temperature of concentrated solution.

2. Power of emulsification which goes parallel with low surface tension and formation of surface films.

3. Wetting power, which makes it possible for a soap solution to creep between and dislodge particles of oily dirt so that they can be flushed away. Emulsifying and wetting power were attributed by early writers to hydrolysis of the soap, but Hillyer[4] proved experimentally that emulsifying properties of soap could not be attributed to hydrolysis and that alkali does not wet oily matter as soap does. Hence both must be due to undecomposed soap.

4. The action of soap in forming non-adhesive colloidal sorption compounds with tissues and impurities which are capable of remaining in stable suspension. Spring[5] attributed the detergent action of soaps to a combination of acid soap (derived from hydrolysis) with dirt particles to form sorption compounds which could not adhere to the fabric. This may be indicated by the following reaction: dirt-fabric + soap = dirt-acid soap + clean fabric. McBain suggests, however, that a more logical alternative would be to consider it a double decomposition re-

[2] *Ber.* 1894, 27: 1747–1755; 1895, 28: 2566; 1896, 29: 1328; 1899, 32: 1584.
[3] Cantor Lectures.
[4] *J. Am. Chem. Soc.*, 1903, 25: 511–524–1256.
[5] *Bull. Acad. Roy. Belg.*, 1909, p. 187–949.

action in which two sorption compounds are formed—fabric soap and dirt soap; and furthermore that the sorption compound is due to soap itself rather than acid soap. Pickering[6] agrees with Spring that such acid-dirt sorption compounds could be formed but points out the fact that preventing hydrolysis does not decrease detergent action.

5. Colloidal condition of soap. This has been conclusively demonstrated by Hillyer and Spring who proved that detergent action is influenced by the chemical composition of soap only so far as this affects their behavior as colloids.

Rosser[7] has recently investigated the subject of soaps with reference to soap saving. He concludes that different soaps show the following order in cleansing power: tallow soaps, soaps from liquid vegetable oils or olein, coconut and palm-kernal oil soaps, and rosin soap. The greatest cleansing efficiency is obtained with 0.2 to 0.4 per cent soap solutions.

The need of some standard method of determining the cleansing effect of soaps and other washing compounds has been quite apparent. Heerman[8] describes a laboratory method in which all factors are controlled and results are comparable.

The launderer, though not directly concerned with the manufacture of soap, is nevertheless as much interested in obtaining soaps which combine economy and efficiency as the manufacturer. The scarcity of fat available for soap making has elicited considerable experimentation and study of possible substitutes, especially in Germany. G. Weissenberger[9] found it possible to substitute a clay from Gaura, Siebenburg, for part of the fat and obtain a detergent which proved useful in a practical washing test. Fenton[10] also produced a soap made with as high as 50 per cent clay. The claims[11] made for colloidal clay soaps prepared by incorporating the clay directly with the oil or fat and caustic during saponification are: (1) It is more soluble in water and lathers more quickly. (2) It is ready for use sooner after manufacture and does not become too dry by long keeping. (3) It is less likely to contain free alkali owing to the absorptive power of colloidal clay. (4) It improves in quality on aging.

[6] *J. Chem. Soc.*, III, p. 86.
[7] *Seifensieder Ztg.*, 1921, 48: 268–9, 290–1, 309–10, 355–7.
[8] *Berlin Ztg., Deut. Oel-Fett-Ind.*, 1921, 41: 338–41.
[9] *Kolloid Ztg.*, 1920, 27: 69–78.
[10] *Sc. Am.*, 1920, 123: 183, Ag. 21.
[11] Colloidal Clay and Hydrolysis of Fats and Oils. *Chem. Age* (London), 1921, 4: 604–5, 638–41.

Cereal soaps[12] have been made by hydrolyzing a cereal flour and saponifying with alkali. Dried or liquid cheese, whey, milk, skim milk, or buttermilk can be added to the extent of 5–20 per cent.

The hydrocarbons have been considered as another possible substitute for fat. By oxidizing the hydrocarbons, especially paraffine, to higher fatty acids, they will combine with an alkali to form soap. The process has been tried on a commercial scale in Germany.[13]

Sulfuroil,[14] which is a product obtained from the manufacture of olive oil by extracting the press cake with carbon bisulfide, may be utilized for soap making and if mixed with other fats produces a hard soap suitable for household use.

Schrauth[15] has patented a process for making a soap from hydrogenated phenols. The soap so produced, being soluble in benzine is especially suitable for dry cleaning. New methods of making soap antiseptic have been patented in both Germany and the United States. Croner[16] succeeded in making a soft potassium soap from a mixture of fatty and hydroxy fatty acids in such proportions that the potassium hydroxy fatty acid soap dissolves in the formaldehyde added and is claimed to possess great disinfecting power. A United States patent[17] covers a process by which sufficient chlorine gas is occluded in soap to give it both antiseptic and bleaching properties.

Aside from the investigation of Keit[18] which established the fact that rosin soap and washing compounds containing trichlorethylene produce a yellow tint in fabrics, no comparative studies have been made to determine which soaps combine the greatest number of advantages. The average laundress has no way of determining the value of the soap she buys except by the trial and error method, and consequently cannot easily detect dishonest advertising; but mills, laundries, and others using large quantities of soap can require that the soap purchased conform to certain specifications. The most recent report on the subject of soap analysis will be found in the Journal of Industrial and Engineering Chemistry, August, 1919.

[12] U. S. Patent 1,360,252, Nov. 30, 1921.
[13] *Chem. Ztg.*, 1921, 45: 177–8.
[14] *Seifensieder Ztg.*, 1920, 47: 711–2.
[15] *Berlin Ztg. Deut. Oel-Fett-Ind.*, 1921, 41: 129–32.
[16] *Seifensieder Ztg.*, 1921, 48: 3–4.
[17] *Patent-Chem. Ab.*, Vol. 15, p. 1827.
[18] *Seifensieder Ztg.*, 1921, 48: 41–2.

*Bluings.*—H. Mayer[19] has investigated the four types of ultramarine bluing and gives three tests for determining quality.

1. Purity of shade—By spreading powdered ultramarine on white paper a mixture of colors would be quite noticeable.

2. Coloring capacity—By mixing equal weights of samples to be tested with five times its weight of plaster of Paris a difference in intensity of color may easily be detected.

3. Fineness—By shaking a quantity in water and noting the time required for complete subsidence, the fineness may be determined.

The presence of foreign material is determined as follows: (1) Starch may be detected by boiling in water. (2) Dextrine is recognized by the odor. (3) By adding hydrochloric acid to the solution a greenish blue color shows indigo carmine to be present, while the absence of color indicates prussian blue. Several tests for aniline dyes are given. Wash blue, China blue, and indigotin are recommended as being suitable for laundry purposes.

Laundering as now done in most homes and in many laundries must be an art; it is not a science. Most of the suggestions for its improvement have come from popular literature where errors have been multiplied many times. However, with the present increasing amount of experimentation on this and related subjects, it should ultimately be as well taught and as scientifically done as any other household task.

[19] *Seifensieder Ztg.*, 1921, 48: 89–111–2, 129–30, 151–2.

# SOCIAL AGENCIES IN THE COAL FIELDS OF WEST VIRGINIA[1]

ISABELLA WILSON

*Marshall College, Huntington, West Virginia*

At first glance any one who knows West Virginia would say, "How can one speak with authority for the women of the mining regions of the entire state?" Since the mountains which divide one section of the state from another are so high, and the roads over many of them are bridle paths or still more impassable, it is almost impossible to know what is progressing in each little mining village. If some good work has been omitted, this is the excuse. West Virginia has voted a bond issue not to exceed $50,000,000 to build good roads, and this construction is going on at present.

As one travels about the state the change that has come over it in the last thirty years cannot but prove startling. At that time West Virginia made small promise, to the casual observer, of the competition she was to give the older coal fields. Thirty years ago the primary occupations in West Virginia were rural ones—farming, sheep and cattle raising. Lumber was an important product but many heavily timbered lands had no railroad outlets. The northern end of the state was enjoying an oil and gas boom. Huntington was a town of ten thousand population; Charleston was not much larger; Beckley had 158 inhabitants; Williamson, Welch, St. Albans, and Bluefield were small rural villages. In the last thirty years Raleigh County has quadrupled its population; McDowell County has nine times as many people, while many counties have doubled their population. In the rural homes of many communities were largely produced all necessary goods, such as clothing, soap, foods, except flour, salt, sugar, and condiments. The people raised their own wheat, and traded one commodity for another. As far back as 1910, 97 per cent of the inhabitants were native born.

But a change has swept over the state. From living in sparsely located rural sections, the people have swarmed into closely settled mining villages. The conditions of life are entirely different, and one who has lived two miles from a neighbor cannot readily adjust himself to living

[1] This paper deals chiefly with the work among women and girls. The writer spent the summer of 1921 in traveling through the mining sections of the state, and has worked for three years in the coal fields as County Home Demonstration Agent of Logan County, as Welfare Director of the Logan Mining Company, and in State Extension Work.

within sixty feet of one. The density of population changed from 31 persons per square mile in 1900 to 50 per square mile in 1910. Here we have gathered together, in an almost continuous mining village, thousands of rural-thinking people who face, not only a new line of work, but a new way of living. The women who formerly produced as well as preserved and prepared the bulk of the food, now buy food which needs preparation only. They who formerly milked the cows and worked the garden now prepare two meals a day and keep a four- or six-room house clean. Any social program for the women of the mining sections which does not take this into account will be a failure. Woman as well as man must work to be happy.

Social work has been carried on in the coal fields by seven different agencies: the Young Women's Christian Association, the Young Men's Christian Association, the Red Cross, the State Health Department, the public schools, religious organizations, and the coal operators who desired to better conditions in their camps.

The Young Women's Christian Association has had workers in mining town work only at Fayette in Raleigh County. Fayette County now has four workers and hopes to have six. It is difficult to find the right workers. The Y. W. C. A. workers use the extension projects and do intensive community work.[2]

The Young Men's Christian Association works with the Island Creek Coal Company at Holden, Monaville, Mallory, and other points. A large Y. M. C. A. House is built usually containing a moving picture show, barber shop, pool room, bowling alley, soda fountain, reading room, and lodge hall. A secretary is placed in charge and the building is made a community center. Here the women hold Ladies Aid and Red Cross meetings, festivals, and dances.

The Winding Gulf Colliery Company, Winding Gulf, does the welfare work through the public school, as do the United States Steel Company of Gary, the Lundale Fuel Company, the E. E. White Coal Company, and the W. F. Tams Company. In some instances the school principal is hired for twelve months. He then has charge of boy scouts or other boys' clubs. Each teacher receives $250 to $300 bonus for engaging in some outside activity. The Logan Mining Company, Logan, W. Va., has two workers, a social visitor and a nurse.[3] At present they

[2] By writing to the Industrial Secretary of the Y. W. C. A., 600 Lexington Ave., New York City, one may obtain full aims of the work done by this organization.

[3] See "Welfare Work in a Mining Town," *Jour. Home Econ.*, January, 1919.

have no classes in cooking or sewing for the girls. The Aracoma Coal Company and the Thurmond and Argyle Coal Company of Logan County, the Leckie Coal Company, and the Pocahontas Fuel Company employ nurses. The nurses serve in most cases a purely medical function; in others, they are social visitors and see that the company property is not abused.

The social religious worker is not so numerous yet as the nurse. We find one at Whitman Creek in Logan County, another at Mallory, another at Gilbert. Their salaries are paid by the churches. The Presbyterian Church has twenty-five social religious workers in the mountains and mining towns. Their work is principally Christian instruction. They conduct Sunday schools and Bible classes and make home visits. During these home visits they discuss sanitation, cooking, and clothing problems with the mothers. These workers come from the training school at Richmond, Virginia, but are not trained along home economics lines. Dr. Mauze, pastor of the Presybterian Church, Huntington, feels that they should have two years of home economics training. A woman trained to help solve home problems and needs can gain the confidence of the people.

Mr. Winthrop Lane Allen says, in "The Truth about the Civil War in West Virginia," that the people have everything done for them; they are not taking part in the work themselves. This criticism is just, but Mr. Allen neglects to give full credit to the workers who so willingly do for others. On the other hand, we must not stunt the social growth of the one we do for. Each person needs an opportunity to work creatively and it seems to me that the program of the State Extension Department will give that opportunity. When we teach the women of the mining towns to provide the winter's supply of food, to make her family's clothing, to budget her husband's income, to nurse her children when sick, to meet the sanitary problems, she will have her work, her share of responsibility. Then in part, perhaps small part, shall we solve the unrest in the mining village.

# BASAL METABOLISM OF WOMEN AND UNDERWEIGHT CHILDREN[1]

KATHARINE BLUNT

*The University of Chicago*

The past few years have seen much increase in interest in the study of basal metabolism, that is, the observation of the calories produced by the body when lying perfectly quiet and without food. This basal metabolism is a measure of the minimum rate at which an individual may live while awake. The rate while asleep is really somewhat lower but because of the many and obvious difficulties of working with sleeping subjects, the custom is firmly established of considering the observation on waking subjects as basal.

Interest in the subject has been stimulated partly by the publication of many hundreds of observations on normal subjects of all ages by Benedict and others, partly by the increasing realization of the diagnostic value of basal metabolism determination in thyroid disease, and partly by the development of the comparatively simple portable apparatus by Benedict. This apparatus, costing only $250, and fairly easily used, has made the study of basal metabolism possible for home economics departments and has given us both a means for research and an opportunity for vitalizing our usual teaching of metabolism.

The essential feature of the apparatus, fully described elsewhere by Benedict, is a closed volume of oxygen-rich air kept in circulation by a blower. The resting and fasting subject breathes into this through a mouthpiece, the nostrils being closed by a nose-clip, and the carbon dioxide exhaled is removed by passing through soda lime. The diminution of the volume of air in the apparatus is easily read on the scale and represents the oxygen consumed by the subject in the given time. The oxygen volume can be converted to calories by multiplying by the proper factor—4.82 per liter. The usual observation period is 10 minutes, duplicates of course always being taken. The total amount of time consumed by the subject with the half hour rest period and two 10-minute observation periods is less than an hour, and the experiment involves not the slightest discomfort unless waiting for breakfast be so considered.

[1] Presented at the Fourteenth Annual Meeting of the American Home Economics Association, Swampscott, June, 1921.

The Home Economics Department of the University of Chicago has been so fortunate as to have had one of these apparatus since November, 1920. This paper summarizes some of the observations that have been made with it.

A woman's laboratory gives, of course, especial opportunity for observation on women. Heretofore, a good many single observations have been made on women; Benedict, notably, has reported on the basal metabolism of 103 women, and formulated his standards of metabolism for women therefrom. Until recently, however, almost no work has been published on the effect of menstruation on metabolism. Is the periodicity of the menstrual cycle in any way reflected in a periodic variation in basal metabolism? Marie Dye,[2] one of our fellows, has made series of observations on 14 women, most of them during 2, or in some cases 3, menstrual periods, with intermenstrual observations as well, and has found no indication at all of a periodic rhythm in metabolism. She found considerable day-by-day variation, with unexpectedly large, and so far inexplicable, ups and downs, but no regularity and no more variation during menstrual periods than at any other time. Her subjects were all women students or faculty members ranging in age from 21 to 44 years, were all in fairly good health, doing their laboratory work regularly. Four of the subjects were so fortunate as to be able to say that they felt absolutely no discomfort of any kind during menstruation; the others experienced more or less fatigue or languor. In other words, the group may fairly be taken as typical of normal women. There may be a periodic rhythm in other body measurements corresponding to the menstrual cycle; body temperature, for example, seems to give indication of such variation. But basal metabolism, and pulse rate which we observed at the same time, do not show periodicity.

We were surprised at first to find our marked day-by-day variation. We had been strongly impressed with the idea that an individual's basal metabolism, at least in health, was constant. If we made many observations on any one subject, however, we were sure to get considerable range for that individual. In one case, for instance, when we made 29 observations scattered over 6 months, the range was from 1080 to 1315 calories per day, a difference of 22 per cent. In most cases our range was not nearly so great, but still it was surprising. We do not consider that it was due to faulty technique, for we constantly tested our apparatus, checked our results, and required close duplicates. Bene-

[2] Blunt and Dye: Basal Metabolism of Normal Women, *Jour. Biol. Chem.*, 1921, 47: 69.

dict, also, several years ago, commented on a similar range in some of his own observations. The point shows the necessity of taking at least two days' observations before reporting definitely on basal metabolism for clinical and other purposes.

Another problem which we have investigated is that of the basal metabolism of some of the underweight women students at the University. Benedict, in 1917, found greatly lowered metabolism in a group of young men students who had lived for several months on a very much lowered food intake, about two-thirds of their normal calories. We were interested to learn whether the young woman student, who was 11 per cent or more under the normal weight for her height but who was eating supposedly enough to satisfy her normal appetite, would show the same low metabolism, that is, would be found to be living on a distinctly lower nutritional plane than normal. Another graduate student in the department, Virginia Bauer,[3] undertook the observation of 20 such young women and found them all to have basal metabolism close to that predicted for them. They did not therefore present the abnormality shown by Benedict's young men who had deliberately cut down their food. Their underweight, serious though it doubtless was for their general health and vigor and their power of resistance to disease, did not effect their metabolism.

Quite different were our results with underweight children.[4] Here we have found abnormality and in the direction of increase. We have observed two groups of underweight children and most of each group had a basal metabolism higher than is to be expected for their weight and age.

Our first group consisted of 13 distinctly undernourished children and one fairly normal boy, all from the Child Health School held at the University last summer under the auspices of the Home Economics Department with Lydia Roberts as director. Of course the chief problem with the children was to keep them lying perfectly quiet, first for the half hour rest period, and especially during the two 10 minute observations, a very long time for 9 to 12 year old children. Alta Nelson, who did the work, succeeded in this because of her own very friendly relation with the children, the many "tests" in the school, and the system of rewards instituted for successful accomplishment of the experiments, chief among

[3] Bauer and Blunt: A Study of the Basal Metabolism and Food Consumption of Underweight College Women. To be published in the JOURNAL.

[4] Blunt, Nelson, and Oleson: The Basal Metabolism of Underweight Children. *Jour. Biol. Chem.*, 1921, 49: 247.

which was membership in the "basal metabolism club" of the school—so called by the children. As a help during the observation periods a fellow student read stories aloud to the children. The observer herself kept careful record of the slightest motion in her young subjects and counted as a success only those determinations during which they were really quiet and in which her duplicates agreed closely. Some children she observed successfully early in the 10 weeks of the school and several times afterwards; one nervous little boy she succeeded with only after the rest periods in the school had trained him in lying quiet.

For the standard to compare with our figures we used the series of curves published by Benedict and Talbot in their recent monograph, "Metabolism and Growth from Birth to Puberty."[5] These investigators give charts with a dot for the basal metabolism at different weights or ages of every one of the many children observed, and then draw smoothed curves representing a fair average of these single dots. Every one of our 13 underweight Health School children showed basal metabolism distinctly above Benedict's curve, in many cases above his highest single dot, and the one normal boy was approximately on the curve. That is, these thin, nervous, "jumpy" children, with their tendency to undereat because of fatigue and poor appetite, really have a basal food need higher than the normal child.

It will be of interest to give some of the figures for Elsie S., a little girl of 10 who, though not the most underweight of the group (only 13 per cent), is the child showing the excess metabolism most markedly. Incidentally it should be stated that the physician who examined her found no thyroid disease. She produced heat at the rate of 1188 calories per 24 hours, while Benedict's and Talbot's average child of the same weight produced 860 calories or 39 per cent less. Every kilo of her weight was thus living a rate more than one-third higher than that of the average child.

Our second group of underweight children was from the University Elementary School. We are not yet ready to report on them in detail, but can say that in general the observations confirm those made in the Health School—that the basal metabolism of underweight children tends to be abnormally high.

This line of work on the metabolism of women and children, normal or otherwise, has thus great possibilities and it is one which we hope to continue.

[5] Benedict and Talbot: Metabolism and Growth from Birth to Puberty. Carnegie Institution of Washington, Publication No. 302, 1921.

# ADMINISTRATION PROBLEMS[1]

AGNES GLEASON

*Manager Parkway Tea Room, Chicago*

Administration is the subject given me to discuss, and I have looked it up in the dictionary, to be sure that I knew its meaning. I find it comes from the Latin "administratio," meaning the "care of affairs" and that a synonym is "the conduct of a business." But, back of "administratio" is another word, its root, which gives the real sense of the first—"minister," the word for "serve." I like to keep in mind the deeper meaning of "administration," which is "service."

Perhaps the most helpful way to discuss the management of a tea room is to imagine one's self answering the questions asked by one who is thinking of establishing such a business. College women frequently come to me as pioneer in the tea room business to ask how to establish a business of their own. They are well equipped with education in home economics which our colleges and technical institutes are so wisely giving. Tea room management looks easy. People always tell them there is money in food. The following are some of the points I would have the aspirant consider.

1. Do you like food, that is, the ordering, or the preparation of it to please the eye and nourish the body? If you do, that is a good foundation.

2. Have you had any experience in preparing food?

3. The question is usually asked: "How much capital is required, to begin on a moderate scale?" I answer: "There is no such thing as a moderate scale today." The word "moderate" will soon have to be eliminated from our dictionaries, for it has no equivalent. The amount of capital needed depends on your choice of location. Rents differ widely in different places. One-third of the amount you have at your disposal should be kept in bank. A rainy week, when receipts fall off, will spell much worry if there is no reserve fund.

4. Location is important, especially in the beginning. Mr. Childs of the famous chain of restaurants says, in the November *American Magazine*, that location is the biggest factor in the success of a popular-priced restaurant, with physical equipment second and management

[1] Abstract of a paper presented at the Annual Meeting of the American Dietetic Association, Chicago, October, 1921. The Journal published an article by Miss Gleason on a similar subject, April, 1920.

third. He is speaking, of course, from a standpoint somewhat different from ours. I should be inclined to put management first.

5. An interior decorator will be helpful, especially to the beginner. I have in mind a resort tea room, conducted for the benefit of a college fund, which owed much of its popularity to a clever decorator, who transformed an ugly cottage into a chic little tea room. But remember, no matter how attractive the dining room is, your patrons come to you primarily for food, and their returning depends on how well you satisfy them in this respect.

6. As to equipment, my advice would be, "buy cautiously." If you visit a store devoted to equipment of restaurants, you will be told that you must have this or that; but wait and see for yourself. Buy only essentials, and these of the best.

7. Perhaps one of the greatest assets in this business is an open mind and a willingness to learn.

Having talked thus far, the young woman who is anxious to start a tea room often says: "I believe I could do it, if only I could learn about the buying of food." My reply to this is that, while it is important to purchase properly, it is still more important to merchandise food successfully, after it is purchased. It is well always to buy the best, but the great art is to sell to the best advantage.

The kitchen is, of course, the heart of the establishment, and success must emanate from that point. The ideal kitchen is sunny and well ventilated. In my establishment, I have to find a way to live up to the requirement of the ten-hour law, effective in all restaurants. I have a group of women who come on duty at five o'clock in the afternoon, replacing three others whose time expires at that hour. These fresh workers go on with the dish-washing and later clean the kitchen and dining-room, which are thoroughly scrubbed every night, making them spotless for the workers to enter next morning. I find there is a desirable pscyhological effect if those who work in the kitchen can come into a clean, sweet-smelling place in the morning. I prefer women, for waiting on table, as it promotes the home atmosphere, but I have had both men and women for superintending the work, and have been equally satisfied with both. At present, I have a man for head waiter.

We have said that the kitchen is the heart of the place, but its efficiency would be much impaired without a well ordered dining room where food is appetizingly served. A maxim often repeated in our tea room is "Food well-cooked and intelligently placed before the guest is sold."

By intelligent service I mean service by women quick in action, neat in appearance, and quiet in deportment.

Much more thought is now being given, and rightly, to the welfare of the helpers, when they are off duty. We have a rest room in which they can lie down and rest or read, when they have time. It is well to carry liability insurance for the staff of workers, and this is usually done by the group insurance plan, which we employ in our tea room. However, that protection should not relax your vigilance on behalf of the welfare of your assistants for whom you are responsible.

Start the day right. It is always well to be on hand before the helpers arrive in the morning, or to be represented there by some reliable person whom you have trained, in your methods. I believe in keeping my assistants and I never wait for them to ask for an increase in salary.

There are many difficulties in the business of serving food. I have recently heard of a hotel proprietor in a large summer resort who said that she had not had a complaint during the entire season. I could only conclude that she had some tactful assistants who kept these complaints from her knowledge. Perfection is our goal, but we can hardly expect to attain it on earth. In my tea room we do have complaints, and they are always welcomed. I say to the helpers: "Do not tell me the compliments you hear about the service here. They will take care of themselves. I want the complaints." All complaints are carefully considered, and I have found the method of calling together all who might be concerned and presenting the complaint to them, as I have received it, more effective than taking the matter up with the individual.

Here are a few "don'ts" for the managers of tea rooms.

1. Don't fail to look into the ice-box in making up your daily menu. "Left-overs" have a direct relation to "turnover."

2. Don't be too penurious with your cook. Food must be well cooked in order to sell well, and to cook it well one must use generous amounts of butter and cream, and other expensive ingredients that go to make a perfect dish. Yet, while we advocate generosity, waste cannot be tolerated. You have not only a right, but a responsibility, to know all that is going on in your business. Here, genius in administration is almost a necessity, but this knowledge thoroughly acquired, much trouble and friction are avoided. Remember, it is your right to investigate every detail of your business, in spite of temperamental spirits in the kitchen. In fact, it is the only way in which you can find the real value of the individual employe.

3. Don't fail to keep in mind the requirements of your guests. In my tea room, the popular thing is a table d'hote service, offering a three-course luncheon for sixty cents and dinner for one dollar. But some people want a la carte service—a chop, or steak, a salad, and dessert. I make these work together and merchandise some of the same articles in each branch of the service.

4. Don't forget to have frequent conferences with your workers. The great pleasure in work comes from doing it a little better than the average, and the best service we can render our assistants is to exact the best from them and reward accordingly. Remember that you, the head of an enterprise, create the atmosphere, and must take the consequences. It is reflected in your assistants. It radiates to your patrons and is just as sincere, serene, tense, generous, penurious, particular, improvident, careful, careless, slovenly, or capable, as is your thinking regarding your enterprise.

5. Don't forget that the price of success in this business is hard work, vigilance in detecting and banishing waste, learning to bear heavy responsibilities without breaking under the strain, and willingness to forego most social pleasures in the beginning until your business is established and your bank account warrants a little letting up. Your work will be constantly on your mind, and the day is long. You cannot take time to form friendships outside your business. But all this does not mean that you must become a one-sided person. Keep the play spirit alive, and if you cannot take time to golf, at least you can indulge in a brisk walk, or visit an art gallery, to refresh your soul. It is perspective we need, and when we are too near a situation, we find our view is foreshortened.

6. Don't be too intent on money making to let slip opportunities to set others in the way of progress. Have your helpers an ambition to do greater things? Help them on. No one truly prospers by keeping others back. Lend them a hand whose fortunes are cast in with yours.

7. Don't worry too much over trifles. Keep a light heart.

To summarize the fundamentals of administrative success, then, let us say it consists of purposeful attitude towards your work, a clear conception of whom you wish to serve and how, an understanding of the requirements of the public and what the service implies, and the ability to merchandise, which includes a great deal, from the selling of your own personality to the selection of the smallest integral part of your enterprise and transmuting it into the check at the cashier's desk.

# A BUDGET PROJECT IN THREE STATE COLLEGES FOR WOMEN

S. DEBORAH HAINES

*University of Chicago. Absent on leave from Oklahoma College for Women*

*Plan and aim.* The schools cooperating in this project were the Women's College of the University of Delaware, Connecticut College for Women, and Oklahoma College for Women. Each student in certain home economics classes kept itemized accounts[1] of all personal expenditures for one semester or one school year according to the length of the course. Detailed summaries from the other two institutions were sent to the writer at Oklahoma College for Women at the close of the semesters in the school year 1920–1921.

The purpose of the project was to make an intensive study of the personal expenses of a representative group within each college and to make a comparative study of the expenditures of the three groups.

*Averages of actual expenditures per student*

| COLLEGE | SEMESTER | NUMBER OF STUDENTS KEEPING ACCOUNTS | LIVING EXPENSES | POSTAGE, PHONES AND CARFARE | CLOTHING AND LAUNDRY | HEALTH | RECREATION AND LUXURIES | EDUCATION AND ORGANIZATION | GIFTS | BENEVOLENCE | MISCELLANEOUS* | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Women's College of the University of Delaware. | 1 | 13 | 162.70 | 17.79 | 75.95 | 4.65 | 20.54 | 21.47 | 15.86 | 1.10 | 15.43 | 335.15 |
| | 2 | No data | | | | | | | | | | |
| Connecticut College for Women. | 1 | 7 | 268.65 | 27.56 | 94.46 | 10.74 | 9.52 | 185.15 | 27.33 | 9.51 | | 633.80 |
| | 2 | 8 | 212.31 | 34.64 | 90.37 | 1.43 | 27.04† | 130.09 | 12.98 | 6.89 | | 514.65 |
| Oklahoma College for Women. | 1 | 46 | 68.48‡ | 18.72 | 81.98 | 4.76 | 13.28 | 28.44 | 17.99 | 5.40 | | 238.56 |
| | 2 | 50 | 69.47§ | 14.14 | 48.20 | 3.62 | 10.93 | 16.38 | 3.96 | 2.29 | | 168.98 |

* In teaching budget work, it is advisable to omit a "miscellaneous" column if possible.

† One student in this group included $135.00 of graduation clothes as "luxury." Perhaps it is correctly placed. It partly accounts for this high average.

‡ Sixteen students paid no "living expenses" because of residing in their own homes or because of working in the dormitory. This makes the average low.

§ Twelve students paid no "living expenses" for same reason as above.

[1] The students used the "Personal Account Book," published by the Woman's Press, 600 Lexington Avenue, New York City.

*Comparison of mean and extreme expenditures*

| | FIRST SEMESTER | | | SECOND SEMESTER | | |
|---|---|---|---|---|---|---|
| | Highest | Lowest | Mean | Highest | Lowest | Mean |
| Connecticut College for Women.. | 1000.87 | 488.67 | 601.40 | 747.70 | 377.90 | 452.00 |
| Women's College of the University of Delaware..... | 692.80 | 229.47 | 309.83 | No data | | |
| Oklahoma College for Women.... | 870.41 | 96.61 | 228.40 | 333.60 | 25.55 | 158.28 |

*Comparison of figures presented.* Why are first semester expenses uniformly more than second semester? Because a new adjustment in living always demands different equipment, such as clothes, books, room furnishings; and also, because trips at Thanksgiving and Christmas require railroad fare and presents. In the second semester, trips are not so frequent, parents do not furnish money quite so freely, and the students have learned in school and by experience to "stretch the dollars."

Why do expenses per student vary so widely according to the institution? It is significant that the cost of living and tuition expenses in the three institutions vary in the same proportion as do the general totals. Board and room per semester at the three institutions are as follows: Women's College, Delaware, $157.50; Connecticut College, $250.00; Oklahoma College for Women, $101.25.

Connecticut college also charges $250.00 per year tuition, and $80.00 to $150.00 additional if the student is taking music. Students' expenses at Oklahoma College for Women are low, because there is no tuition, because board and room are only $22.50 per month, and because dress regulation requires plain tailored clothes for school wear. These regulations and the fact that many students make some of their garments in clothing classes, explain the low average of $48.20 per student for clothing during the second semester. On the whole, the difference in cost per school year can be explained largely through cost of tuition, board, and room. The students, as groups, are careful spenders.

What is the significance of the fact that the mean[2] is each time lower than the average for the same school in the same semester? It shows that a few extravagant students in each college have made the classes' average high. When sufficient numbers are available, the mean is consid-

[2] The mean is found by arranging total expenditures in this case, according to the size and finding the total that is equidistant from both extremes. Thus, if 1, 2, 7, 9 15 are the totals, 7 is the mean.

ered more accurate than the average, because two or three extraordinary cases should not be allowed to influence, so markedly, a group of fifty that are very similar. The total average cost per year at Oklahoma College for Women is $407.54; the mean cost per year is $376.68. Those who have data from other colleges will be interested in making further comparisons.

*Results from budget studies.* The first result from keeping personal accounts is an opportunity for the student to study her expenditures. She is usually surprised at the distributions. The second result is that she learns to make a personal budget, using past expenditures as a basis, and to measure her expenditure by a standard. A standard budget for one month was worked out at Oklahoma College for Women by one class, with the aid of the teacher and the college president, as follows: Board and room, $22.50; Books and Lyceum, $4.00; Stamps and stationery, $2.00; Laundry, $5.00; Luxuries, $4.00; Benevolence, $2.00; Carfare, $1.00—Total, $40.50. Expenses for recreation were understood to come under "luxuries," since there is much recreation available that does not cost money. Clothing, gifts, railroad fare, and health are items varying so widely with different seasons and different individuals that they were not included in this standard.

The budget studies stimulated the classes to ask important questions and to try to answer them. They answered the question, "What does it cost a student to attend college for one year?" Other questions which arose were as follows: "What does it cost a student to fail in one study or one fourth of her regular work?" "What does such a failure cost the state maintaining the institution?" "Are students' 'good times' in proportion to the amount spent for luxuries?" "What is a luxury? Is a ham sandwich a luxury? Is a new dress? Are magazines?" "What gifts have been much appreciated that cost very little? What gifts have been little appreciated that cost much labor, or money, or both?"

The family budget was a natural outgrowth of the personal budget. While studying this, the question of owning an automobile arose. Some of the class believed a man with $2000 income who did not have an automobile lacked proper respect for his family's comfort. A student with this opinion made a study of automobile costs for her final paper. She used figures given to her by the owners of one expensive and nine inexpensive cars. She found that, if depreciation in value, interest on money invested, repairs and up-keep, insurance, gasoline and oil, taxes and license were included, it cost about as much to own a cheap or me-

dium priced car as it did to keep this family of five. She concluded that this man could not own a car and add to his savings account.

*Suggestions.* Individual accounts prove a natural approach to an interesting and profitable study of the personal family budget. Home economics classes in general, and particularly major students in home economics, would do well to keep personal accounts and to have a working budget. Why talk imaginary budgets to students, when you can make real ones? Why plan a $500 wardrobe per year, when your students have less than $150 per year to spend for clothing? Let us study and teach home economics.

## THE RURAL SCHOOL LUNCH TODAY

LOTTIE MILAM

*Montana State College, Bozeman*

Many years ago the supplementary hot dish for the rural school lunch was an experimental novelty. Today it belongs to the "tested-and-tried" class. Cold noon meals, carelessly selected, five days a week throughout the months from September to April, frequently result in poor digestion, and therefore, poor health.

*How does the health of the rural child compare with that of the city child?* Investigations made among rural children show that in the rural communities the number of undernourished children with defective bodies is more than double that in the city.

*What is this hot school lunch?* According to a recent survey practically every state in the union has introduced it to some degree. The hot lunch in most rural schools has been that portion of the noon lunch which is prepared at school. It adds to, and does not attempt to be a substitute for, the lunch brought from home. In many cases it is simply one hot dish, frequently made with a milk foundation.

*How do the schools and communities undertake or introduce this work?* The weighing and measuring of the children of a school group frequently draws attention to the need of adequate school lunches. Requests then come from parents, teachers, and school boards to those who can advise them about introducing the hot lunch. General interest may be aroused

by a speaker, experienced in this work, using posters, slides, or flyers. Local newspapers advertise the meeting and put the pertinent facts before the public. Some colleges offer correspondence courses on school lunch work. Parent-teachers' associations and mothers' clubs have taken the initiative in placing this plan before the community in many states.

*What means are used to obtain the supplies and equipment?* In some communities, these are donated by the families, the parent-teachers' associations, or the canning clubs; in other communities the schools have purchased supplies and equipment with money appropriated by the school board, or with special funds raised by assessing each child or giving school entertainments.

*Where can food facts be taught in the rural school?* Since there is not time in the crowded schedule to introduce a new subject, much subject matter on food and its relation to health can be introduced into the regular subjects. For instance: arithmetic—compute amounts of food needed and cost; language and writing—composition on food products and countries producing them; history—relation of food to comfort, happiness, and progress of the people of the world; geography—source and transportation of food product used in today's hot dish; physiology—groups of food necessary for the body; drawing and manual training—posters, illustrating slogans or facts or announcing the hot dish served; agriculture—methods of growing various food products and types of soil required; sanitation and hygiene—transmission of disease through food, water, insects, and contact.

*What are some of the changes due to the hot school lunch?* The hot school lunch has brought about greater interest in school work, improvement in the general physical condition of pupils, less need of discipline, increased interest in home work, improved attendance especially on cold days, less hurried eating, habits of cleanliness and neatness, good table manners, and proper eating habits. It has furnished an opportunity for the teacher to inculcate an appreciation of food and to overcome idiosyncrasies in taste, thus introducing variety into the home diet. Smaller quantities of cold lunch are discarded because better planned lunches are brought from home.

*Some facts collected* in March and April, 1921, concerning the present status of the hot lunch work in the rural schools of the United States are as follows:

Supervision is provided in the following ways: (a) by separate specialists who direct the work; (b) by the Department of Education, alone or

*Survey of Schools*

| STATE | TYPE OF SUPERVISION* | SERVE HOT LUNCHES | NUMBER OF PUBLIC HEALTH NURSES | STATE | TYPE OF SUPERVISION* | SERVE HOT LUNCHES | NUMBER OF PUBLIC HEALTH NURSES |
|---|---|---|---|---|---|---|---|
| Arkansas.... | c | | | Nebraska | c | 33 per cent under one director; 35 schools under another | In 3 large towns |
| California... | c | 10–15 per cent | | Nevada | c | Few towns | |
| Colorado.... | c | | | New Jersey | c | 25 per cent | 50 |
| Delaware ... | | 1 county 33⅓ per cent | | New Mexico | b | High per cent | Few |
| Florida ..... | c | 12 schools | | New York | a | | 10 full time, 30 in all |
| Georgia..... | c | 2 per cent | | Ohio | a | | Many |
| Illinois..... | a | 575 schools | 98† | Oklahoma | | 50 per cent | |
| Indiana..... | c | 25 per cent | 48 | Oregon | c | | Few |
| Iowa..... | c | 33⅓ per cent consolidated, 11 per cent one room | 74 | Pennsylvania | a, b | | |
| Kansas ..... | a | | | Rhode Island | d | 2 per cent | 30 per cent |
| | | | | South Dakota | | 20 per cent | Most counties |
| Maryland... | c | 167 schools | Few | Tennessee | c | Many | Few |
| Massachusetts..... | a, c | | | Virginia | a | 2 counties | 26 |
| Michigan ... | c | | | Washington | c | | |
| Minnesota .. | d | All consolidated, 50 per cent of 1 room | 50 per cent | West Virginia | c | | |
| Mississippi.. | c | | | Wisconsin | c | 28 per cent | |
| Missouri.... | c | | Few | Wyoming | c | 10 per cent | 10 per cent |
| Montana.... | | All consolidated, 50 per cent of 1 room | | | | | |

* The letters in this column refer to type of supervision outlined above.

† Fifty Red Cross and 48 T. B. nurses; 25 counties have Red Cross nurses for special schools.

in cooperation with the Department of Public Health; (c) by extension service, except in states having specialists who devote their entire time to this work; (d) by extension service in cooperation with the Department of Education or with the Vocational Home Economics Department.

Eight states have hot lunch clubs, 17 states use graphic posters, and 21 states issue bulletins or other material through the Extension Department, the Department of Education, or the Department of Public Health.

*Available material.* The majority of the states send out material from a central office from which the work is directed. The usual points covered in this material include suggestions for suitable hot lunch foods, equipment, recipes, food needs of the body, foods supplying these needs, diet for children, ways and means, duties of working committees, suggestions for the box lunch. There are some states as Massachusetts, Illinois, Nebraska,[1] Pennsylvania, Ohio,[2] New Jersey, and New York whose material covers additional points. No attempt has been made to list the material obtainable from other sources.

[1] Playlet, "How Joe's Lunch Disappeared."

[2] "Ohio's Own School Lunch Picture Story," is a slide lecture with 32 slides.

A very good list of references is contained in Circular No. 9 Agricultural Extension Service, Ohio State University, Columbus.

## IRON ANALYSIS OF KALE AND TURNIP GREENS

MARIETTA EICHELBERGER AND MAUDE ASBURY

*University of Kentucky*

The class of vegetables known as "greens" is one of our most important sources of iron. As far as we have been able to ascertain, no iron analyses of kale and turnip greens have been published. Because of the abundance and popular use of these greens throughout the Southern states, it seemed desirable to make these analyses.

In as much as the iron content of spinach varies,[1] it was thought best to run analyses of this vegetable concurrently with the other analyses, using it in a way as a check.

*Method of determination of iron.* Of the various ways of determining iron, the method used by Blunt and Otis,[1] that is, the colorimetric method with potassium thiocyannate, was chosen. The standard of known iron content was prepared by dissolving 0.10 gram of iron

[1] Blunt and Otis, *Journal of Home Economics*, 9 (1917) p. 213.

wire (99.9 per cent pure) in 5 cc. each of concentrated hydrochloric and nitric acids, and making up to two liters. One cc. of the resulting solution contained 0.05 mg. of iron, or 0.00005 gram. The standards were then prepared with varying amounts of the ferric thiocyannate, being careful at all times to observe the same precautions as were observed by Blunt and Otis.

In preparing the greens for comparison with the standards, the organic matter was destroyed by oxidation. About 10 grams of the vegetable were weighed into a Kjeldahl flask and the oxidation process carried out. It was found however that upon complete oxidation it was necessary to filter the resulting solution before the addition of the potassium thiocyannate, otherwise a white precipitate, which was formed during the process of oxidation but which gave no test for iron, obscured some of the color and the standards matched were about half as intense as they were after filtering. After filtering, the solution was made up to volume in the normal way and the determinations made.

*Results.* The results of the experiments are given in the following tables:

TABLE 1

*Turnip greens—raw*

| AMOUNT OF GREENS | IRON IN STANDARD MATCHED | PER CENT OF IRON IN RAW TURNIP GREENS |
|---|---|---|
| *grams* | *mgm.* | |
| 8.7339[1] | 0.02375 | 0.0027 |
| 10.002 | 0.02875 | 0.00287 |
| 10.6894 | 0.02875 | 0.00268 |
| 10.7715 | 0.0275 | 0.00255 |
| 10.8091 | 0.02875 | 0.00265 |
| Average..... | | 0.00269 |

TABLE 2

*Kale—raw*

| AMOUNT OF GREENS | IRON IN STANDARD MATCHED | PER CENT OF IRON IN RAW KALE |
|---|---|---|
| *grams* | *mgm.* | |
| 9.438 | 0.0375 | 0.0039 |
| 10.268 | 0.0325 | 0.00316 |
| 10.005 | 0.035 | 0.00359 |
| 9.824 | 0.05 | 0.00509 |
| 10.445 | 0.02 | 0.00191 |
| 9.337 | 0.01 | 0.00107 |
| Average ..... | | 0.00312 |

TABLE 3

*Spinach—raw*

| AMOUNT OF GREENS | IRON IN STANDARD MATCHED | PER CENT OF IRON IN RAW SPINACH |
|---|---|---|
| *grams* | *mgm.* | |
| 9.703 | 0.03 | 0.00309 |
| 10.790 | 0.0263 | 0.00243 |
| 10.575 | 0.0275 | 0.0026 |
| 9.839 | 0.02875 | 0.00291 |
| 11.734 | 0.02 | 0.00255 |
| Average ..... | | 0.002716 |

TABLE 4

*Comparison*

| VEGETABLE | PER CENT OF IRON |
|---|---|
| Kale..... | 0.00312 |
| Turnip greens..... | 0.00269 |
| Spinach..... | 0.002716 |

# FOR THE HOMEMAKER

## THE PRICE OF PROGRESS

CAROLINE B. SHERMAN

*Assistant in Market Information, United States Department of Agriculture*

What constitutes marketing? Everywhere we hear and read criticisms of our present marketing situation but seldom do we hear any clearly stated analysis as to just what constitutes marketing. We hear frequent discussions regarding the difference between the price paid to the farmer for produce and the amount paid by the consumer, but we hear little regarding what actually takes place between the time the products leave the farm and the time they are bought by the housekeeper for consumption. Improvement in methods is vitally necessary but before much improvement can take place we must have a clear knowledge of the primary necessities of marketing.

In producing for our present commercialized markets, farmers as well as nations have found that they can get best results by specializing on certain crops or kinds of farming according to aptitudes, farming conditions, climate, and soil. This, together with the tendency of population to congregate in large cities, has operated to drive production ever farther from the millions to be fed and clothed. We have grown permanently away from the days when most housekeepers bought direct from their own farmer-market-men. We are no longer content to use only those foods that are locally in season, and we must be willing to take fair-minded stock of the consequences.

The farmer, as a rule, produces quantities ranging from the box to the wagon load, but the smallest unit that can be shipped long distances most profitably is the carload. Some one, therefore, must assemble the small farm lots and adjust the quantities to the demands of the processes of marketing, and this is usually done by the country shipper, carlot buyer, packing house, or other local factor. A carload of apples thus collected looks large to the farmer, but the warehouseman requires many carloads of apples for successful operation. During the winter, however, the demands from the trade reach him in the terms of relatively

small quantities—fifty boxes, perhaps, at a time. These the wholesaler deals with, selling them to the retailer in even smaller quantities, for, as householders cannot and will not go long distances to buy at concentration points, many of the retail stores must be located in business or residence neighborhoods where rents are high and space at a premium. Here the retailer finally sells the apples by the half-dozen or the half-peck. Thus the work of the farmer in collecting his apples, of the country buyer or packing house in forming carlots, of the storage man in concentrating trainloads, which was first broken into by the wholesaler in dealing in dozens of boxes, is finally undone by the retailer in order to fill the specific demands of his customers.

With the increasing use of standards and brands, purchasers are coming to demand with increasing frequency specific grades of goods. The careful grading of farm products has everything to recommend it, but whether accomplished by the farmer individually, by producers' associations at centralized country points as at fruit packing houses, by the country buyer, or by dealers either wholesale or retail, it is a service exacting time and painstaking care if properly done and it is a service that must be paid for. Often regrading must be done several times during the process of marketing as units are made larger or smaller to fit the demands of the trade.

Not only are staple goods now usually graded before sale but fruits and vegetables are rapidly falling into line. The citrous fruits and apples were the first to be graded uniformly by strict standards, but now potatoes, onions, cantaloupes, tomatoes and many other perishables are so sold on the markets. Purchasers have learned the desirability of securing uniform size and quality even by the payment of a higher price and are becoming increasingly impatient with ill assorted commodities.

Practically all farm products require packaging in one form or another in the process of marketing. Apples must be placed in barrels or boxes, lettuce in hampers or baskets, milk in cans and bottles, butter in tubs and cartons, cotton in bales and bagging. Many of them require repackaging in the course of marketing as in the case of milk. Packaging is necessary for protection to product, for economical carriage and storage, and for convenience all along the line including always the consumer. How expensive these containers may become, in addition to the labor of packing, was forcefully demonstrated during the war.

Processing is almost as prevalent as packaging. The farmer sells cattle, grain, hides, and cotton; the consumer buys meat, bread, shoes,

and clothing. Between the time the products leave the farm and the time they reach the ultimate consumer, cattle must be converted to steaks, grain must be reduced to flour and made into bread, hides must be transformed into leather and then into shoes, and cotton must be made into cloth and then into garments. In each case the intermediate steps of the process are necessarily many. Processing has almost entirely left the farms and has been withdrawn from city dwellings. The results in large scale operations have made great average savings possible but, if both farmer and consumer leave the task to others, the others must have fair compensation.

The actual making of sales in our complicated marketing systems is a function often requiring peculiar qualifications, experience, knowledge, or skill. To sell advantageously on large markets, a salesman must have one kind of knowledge and skill; to sell to individual customers in retail trade requires entirely different qualifications. The first demands extensive information regarding supplies, actual and potential, quantities, qualities, conditions, trends, and competition; the second demands a knowledge of human nature in all its variations and contradictions. As salesmanship becomes more highly specialized it obviously becomes more high priced.

Recent discussions of transportation rates make emphasis on the cost of carriage unnecessary, but it is not generally known that studies show local hauling to be also relatively expensive. Good roads and good equipment may lessen this apparent cost but they, too, are expensive in initial investment and in upkeep and may be considered indirect costs of transportation.

Market preferences, much more potent than most consumers realize, result in cross freights and unnecessary work and cost. In some cities only dark-colored cranberries sell well, while in other cities lighter ones are in sole demand. In some cities dealers can handle only dark eggs advantageously; in others the white egg is the favorite. Shippers of large quantities often find it necessary to ship past their nearer markets in order to reach the markets where their particular variety is especially wanted.

Storing and warehousing constitute a service of much economic importance. With few exceptions all of our crops are seasonal in production but most of them are in demand by consumers the year round. Few farmers have more than the most limited storage facilities and much farm storage is inadequate in efficiency, while city conditions render it increasingly difficult for families to buy supplies very far in advance of

use. Some one, therefore, must store on a large scale to adjust this essential time difference between production and demand. Thus storage becomes both a consumer and a provider. Our products are kept, protected, accounted for, and financed during this intervening time between harvest and harvest. Some products require heated storage, others normal warehousing, and many of them require cold storage or even freezing temperatures. It is seldom that much variation is allowable. Heating, refrigeration, and ventilation are also expensive factors in transportation.

The financing of marketing and storing operations is an essential and hazardous factor. Financing often begins while the crop is still growing when the farmer borrows from his local bank to cover the expenses of harvesting. It is usually necessary through every subsequent step of marketing until the products are finally in the hands of the consumers. Large terminal companies, commission merchants, city banks, all assist in financing market transactions. A single grain company may advance as much as $1,000,000 to country buyers during the height of the crop movement, and the interest charge is necessarily heavy. Insurance and hedging are used to lessen risk from fire, deterioration, and change in price.

All of these operations do not take place in the marketing of every product, and sometimes they can be and are performed by the farmer or his association, or by the consumer, but as our modern life is now organized, they form the typical process through which our farm products pass from the farmer to the consumer. To make permanent improvement in methods possible it is necessary that we understand all of these functions clearly in all of their phases, and understand their inter-relation as well. Then and then only can we hope to make material progress in the popular program of taking the mystery out of marketing.

# REPORT OF A TEST OF FLOOR OILS

MELISSA FARRELL SNYDER

*Office of Home Economics, United States Department of Agriculture*

The following practical home test of floor oils was made under the direction of the Office of Home Economics, United States Department of Agriculture. The experiment was started early in January, 1921, and continued until June 30, 1921.

## EXPERIMENTAL

Three different kinds or types of mixtures were tested. The first consisted of one part of motor or engine oil to four parts of kerosene; the second was made up of one part of boiled linseed oil to three parts of turpentine; the third was a widely advertised commercial floor oil.

The separate mops used for each kind of oil were thoroughly saturated before the floors were first gone over and were moistened about once a month after that. The floors were mopped on the average of once a week. During the course of the experiment the mops were kept in the paper containers in which they were purchased and at no time was there indication of spontaneous combustion.

Four rooms—a living room, a dining room, and two bedrooms—and a hall, all on the third floor of an apartment house, were devoted to the experiment. This apartment house is located on the corner of two streets where there is much traffic, and soft coal is burned in its heating plant. Considerable dust and dirt flies in through the windows and seeps through the window casings, thus discoloring the floors as well as affecting the woodwork, hangings, and furniture.

The floors, of 2¼ inch pine, were old and very dark from many coatings of shellac and varnish. Before the experiment was started, however, the floors were scrubbed with a strong solution of washing soda and water until they were of a light shade.

In the bedrooms and the hall the entire floor surface was oiled throughout the experiment. On the bedroom floors the motor oil and kerosene was used; in the hall, the commercial oil. For the first five months the living and dining rooms were partially covered with 9 x 12 rugs and a few small ones, leaving only the margins of the floor exposed for treatment, but during the last month all rugs were removed and stored and the entire floor space of these two rooms also was oiled. The turpentine and linseed oil mixture was used on these floors.

Written notes on the condition of the floors were kept from the beginning of the experiment until the end.

It was found that the bedroom floors, where the motor oil and kerosene had been used, were considerably darkened during the experiment. This effect may be partly due to the fact that this oil was slightly gummy and coal dust and dirt stuck to it. Also this particular oil left a dull finish, but whether or not this effect was due to imperfect removal of varnish, before the oil was applied, can not be positively stated.

The hall floor, on which the commercial oil was used, was also darker than the others but after oiling it had a gloss which would last for some time, notwithstanding the fact that this hall received more wear and tear than any one of the rooms.

The living and dining room floors, on which the linseed oil mixture was used, always retained their light, even color and gloss, and when the rugs were removed there were no "high water marks" around the edges to show where the rugs had been. In fact, the oil seemed to have a cleansing action and in no way discolored the portions treated with it. Such discoloration would have been readily noticed when the rugs were removed.

SUMMARY

A floor oil consisting of one part boiled linseed oil to three parts turpentine had a cleansing effect upon the floors to which it was applied and did not injure the gloss nor darken the floor on which it was used.

The particular commercial oil used in this experiment darkened the floor on which it was used but did not injure the gloss.

The mixture of motor oil and kerosene decidedly darkened the floors on which it was applied, and tended to dull the finish of the wood.

## DATA ON WATER HEATING IN THE HOME

Kansas State Agricultural College, in a bulletin on "Water Heating in the Home," gives results of extensive tests.

The object of this investigation was to determine the following factors in the use of coal, kerosene, gasoline, gas, and electric water heaters:

1. The cost of operations, both for supplying hot water continuously and for furnishing hot water for a single definite purpose.
2. The care necessary to operate the heater.
3. The quantity of water which will be given a definite rise in temperature per hour.
4. The practical efficiency of the combined heater and its attached tank.

For a family of three for general domestic purposes, bath and laundry, where the range boilers are well insulated, the following will apply:

| FUEL | QUANTITY PER MONTH | COST PER MONTH |
|---|---|---|
| Soft coal ($8.00 per ton) | 300 lbs. | $1.20 |
| Kerosene (one burner, 15 cents per gallon) | 15¾ gal. | 2.36 |
| Gasoline (20 cents per gallon) | 19 gal. | 3.80 |
| Gas (automatic-type heater, $1.25 per 1,000 cu. ft.) | 2,700 cu. ft. | 3.38* |
| Electric (circulation, immersion, or direct-contact type, 750-watt, at 2 cents per kw. hour) | | 7.50 |

* A note by S. S. Wyer states that, since natural gas has twice the heating energy of manufactured gas, one-half the volume would have done the same work. If the gas cost had been 50 cents per "M", the monthly fuel cost would have been $0.67.

The heaters tested showed efficiencies (per cent of heat in fuel that was accounted for in heating water) as follows: coal, 18 per cent; kerosene, 37 per cent; gasoline, 40 per cent; manufactured gas, 60–67 per cent; electric, 81–97 per cent.

Tests of the pilot on automatic gas water heaters showed consumptions of from 34 to 127 cubic feet per day.

The advantage gained by covering range boiler tanks is very appreciable. A covering of asbestos cement to a thickness of about three-fourths of an inch reduces the losses 26 per cent. A range boiler tank cover, consisting of an inner lining of asbestos paper, a filling of $\frac{1}{2}$-inch hair felt, and an outer cover of canvas, reduces the losses 60.7 per cent. A covering consisting of asbestos paper and $\frac{3}{4}$-inch hair felt, held to the top and sides of the tank by a wrapping of white muslin, reduces the losses 71 per cent.

## COMPUTING HEATING VALUES

According to a summary in *The Glass Industry* (vol. 2, 1921), the following average figures should be used in computing heating values.

| | |
|---|---|
| Producer gas | 150 B. T. U. per cu. ft. |
| Coal gas | 600 B. T. U. per cu. ft. |
| Coke oven gas | 550 B. T. U. per cu. ft. |
| Natural gas | 1,100 B. T. U. per cu. ft. |

## THE FARM WOMAN AND HER SEWING

There seems to be some tendency to urge that the farm woman should do more of her sewing, and save her money. Since she already has long hours, should she not ask herself these questions:

Is the sewing a rest or a burden? To some the sewing might be a pleasure; to others, a care.

What can best be bought ready-made? Experiments have shown that certain things cost practically no more ready-made than the cost of the material. Other things cost no more, but they do not wear so well. Is it possibly not desirable to buy what will wear; for instance, if the garment is to be used by a rapidly growing child, and there is no one to whom it can be passed down? Other things, particularly when they have any hand work, are very much more expensive when bought ready-made.

Is choosing wisely from the mail-order catalogue one of the things that the farm woman should learn? Making a demand for good material rather than fancy trimming will count.

Is the question of more or less sewing one to be decided individually? One woman did her own sewing, and spent the money saved in travel with her husband. Another hired her sewing done, and saved the time to walk in the air with her children. Whenever there is a choice, should not these and other considerations count?

Does the garment made at home always cost less? Is it not something like the ten cent store? Most things cost less there, but occasionally one pays more. Experience and good judgment are needed to decide.

## CEDAR CHESTS

Chests made of red cedar heartwood are effective, if in good condition and thoroughly tight, in protecting clothing from clothes moths, it has been found by the United States Department of Agriculture. That is, provided proper precautions are taken first to beat, brush, and, if possible, sun all articles before they are placed in chests. Since it is the odor of red cedar that kills young moth worms, special care should be taken to prevent undue escape of the aroma from the chests.

Of the three stages in the growth of clothes moths—the adult or moth miller, the worm or larva, and the pupa,—the second is the only one that damages fabrics, and the only one killed in cedar chests; but this is not affected after it becomes one-half to full grown. Practically all moth worms hatching within the chests die within one or two weeks after hatching and a surprisingly large number die within two to three days. Of the worms hatching within cedar chests, from the 2,074 eggs recorded in experimental work, none were found alive one month from the date the eggs were placed in the chests.

If clothing is cleaned and brushed with great care and immediately rolled tightly with napthalene with several thicknesses of unbroken paper, it will remain unmolested by moths. The ends of the package must be doubled back and securely tied or sealed so that no moth can crawl into the package at the ends. Clothes moths will not eat through paper under ordinary conditions. One to two pounds of fresh napthalene, placed in any chest constructed as tightly as are cedar chests, will protect clothing from moth damage just as well as cedar chests.

## WHOLESALE PRICES IN UNITED STATES AND CANADA*

(Average of Year 1913 = base 100)

| YEAR AND MONTH | FARM PRODUCTS | | FOOD | | CLOTHS AND CLOTHING | | FUEL AND LIGHTING | | ALL COMMODITIES | |
|---|---|---|---|---|---|---|---|---|---|---|
| | United States | Canada | United States | Canada | United States | Canada | United States | Canada | United States | Canada |
| 1913, July 1..... | 101 | 100 | 102 | 99 | 100 | 100 | 99 | 96 | 100 | 100 |
| 1914, July 1..... | 104 | 109 | 104 | 96 | 99 | 104 | 95 | 93 | 100 | 100 |
| 1915, July 1..... | 108 | 122 | 104 | 96 | 99 | 111 | 90 | 90 | 101 | 111 |
| 1916, July 1..... | 118 | 130 | 121 | 118 | 126 | 147 | 108 | 107 | 119 | 134 |
| 1917, July 1..... | 199 | 187 | 181 | 172 | 187 | 184 | 192 | 195 | 186 | 184 |
| 1918, July 1..... | 224 | 216 | 184 | 188 | 249 | 220 | 166 | 205 | 198 | 210 |
| 1919, July 1..... | 246 | 205 | 216 | 184 | 282 | 252 | 171 | 195 | 218 | 218 |
| 1920, July 1..... | 236 | 247 | 268 | 222 | 317 | 236 | 252 | 294 | 262 | 257 |
| 1921, July 1..... | 115 | 145 | 134 | 143 | 179 | 138 | 184 | 204 | 148 | 177 |
| 1921, August 1 ... | 118 | 147 | 152 | 146 | 179 | 136 | 182 | 203 | 152 | 175 |
| 1921, September 1 | 122 | 134 | 146 | 149 | 187 | 136 | 178 | 203 | 152 | 172 |

* From the Barometer Letter prepared by Babson's Statistical Organization, Wellesley Hills, Mass.

# EDITORIAL

**Metabolism of the Underweight Child.** The attention being given to child nutrition in schools, clinics, extension and social centers but parallels the increasing amount of investigative study of the physiology of digestion and metabolism of normal and abnormal children. The arousal of the public to a live concern over the perhaps more superficial aspects of the problem of the undernourished child has no doubt stimulated a considerable part of these investigations now in progress. We are beginning to find out something of what is taking place within the body of the underweight child.

Undernutrition in infants and the changes in metabolism which follow are caused originally by artificial feeding says Utheim.[1] He says that one of the first effects of failing nutrition is in the circulatory system as indicated by a decrease in certain oxidative powers of the organism. Later follow changes in intermediary metabolism and functional disturbance in the intestinal tract. The food eaten is less well utilized and in severe cases there is a loss of food material in the stools as high as 26 per cent of the food intake, a loss which decreases with improvement in the nutritional status of the child.

The basal energy metabolism of severely malnourished infants has been charted by Talbot[2] in a new series of observations. He shows the metabolism to be abnormally high for the size of the infant though there is not a noticeable increase until the child is 20 per cent or more underweight; the more the infant is underweight the more calories it produces per kilo of body weight. Older children have been found by Blunt, Nelson, and Oleson[3] to show this same excessive rate of metabolism per kilo of actual weight, but here the variation from the smoothed curves for the child of normal weight is apparent even when he is considerably less than 20 per cent underweight. They report an average metabolic excess

[1] Utheim, K.: Metabolism studies in infants suffering from chronic nutritional disturbances. Am. J. Dis. Child., 1921, 22: 329.

[2] Talbot, F. B.: Severe infantile malnutrition. The energy metabolism with the report of a new series of cases. Am. J. Dis. Child., 1921, 22: 358.

[3] Blunt, K., Nelson, A., and Oleson, H. C.: The basal metabolism of underweight children. J. Biol. Chem., 1921, 49: 247. See also the article by Dr. Blunt in this number of the JOURNAL.

of about 25 per cent for their 8 to 12 year old children as compared with the normal children of the same weight charted in the monograph by Benedict and Talbot.[4] No close relationship was found in these older children between the per cent of underweight and the excess of energy metabolism.

Just what is the full significance of this high rate of metabolism in the underweight child is not yet apparent. Talbot has estimated that if his infants had weighed what normal infants of the same age do weigh, then the basal metabolism would have fallen more nearly within the normal curve, which shows that the high rate is due to a low body fat content. The body's metabolism goes on apace even though the filling out of the body with fat lags behind. Failure by the undernourished child to absorb and use even that food which is given, taken together with the fact that the child first failed to gain or lose weight because of lack of food, would appear to be a vicious circle difficult to break. Malnutrition does not always yield easily to correction as every physician, mother, and nutrition worker knows. As our knowledge of the physiology of digestion and metabolism of children increases, more light will be shed on the methods of procedure in dealing with the underweight child.

**Studies in Coffee Making.** The last word about methods of making coffee is far from being said yet as is indicated by the many interesting investigations now in progress. Prescott,[1] working for the National Coffee Roasters' Association, has found that water below the boiling temperature, about 85 to 90 degrees Centigrade, brews a cup of coffee far superior in flavor to that made with water at 95 to 100 degrees. Coffee boiled one and one-half minutes is decidedly inferior to any made at a lower temperature. His judgment is the outcome of a vote of groups of individuals of discriminating taste perceptions who acted as the tasters of his experimental brews. He is led to believe that there is "what may be called a critical temperature in coffee making, which is below the point at which the effervescence takes place, when chemical changes go on in the coffee that permit the solution of more of the astringent or bitter substances. . . . . There is the important physiological aspect of the problem, for it may conceivably be that the complex changes brought about at or near the boiling temperature

[4] Benedict, F. G., and Talbot, F. B.: Carnegie Institute of Washington, Pub. 302 (1921).

[1] Prescott, Samuel C.: Report of Investigations by the Bureau of Scientific Research of the National Coffee Roasters' Association, The Tea and Coffee Trade Journal, 1921, 41: 688 (November).

decompose certain substances in the bean with the formation or setting free of materials that are not only prejudicial to the taste of the coffee, but may also have a direct physiological effect of undesirable character."

The stress which professional coffee men heretofore have put on violently boiling water can hardly be discounted so quickly. On the other hand, it is true that percolated and drip coffees, so popular and easily made, do not reach the boiling temperature and yet with the average man pass as very excellent coffee. Prescott's preference for water below the boiling temperature is probably not to be given the approval of the association until further corroborated.

The caffein Prescott believes to exist both in the free state and in combination, though the combined caffein is probably broken up to some extent by the roasting process. If these unbroken caffein compounds have any bearing, as he believes they do, on the known coffee idiosyncrasies of some individuals, then a high roast may be a desirable thing. However, Sayre[2] intimates that a low roast is desirable for reasons other than the effect on the caffein. The toxic effects of coffee, he says, are due, not primarily to the caffein but to such compounds as furfuraldehyde, pyridine, catechol, the decomposition products formed at the high roasting temperatures.

The art of coffee making, the chemistry of the constituents which give the brew its flavor, body, and aroma, and the effects of coffee upon the metabolism of both children and adults, all offer fertile fields for investigative endeavor.

**Belgian Exchange of Students and Teachers.** The Belgian Ambassador to the United States and the Belgian Director General of Agriculture and Horticulture suggest that it might be of mutual advantage to the United States and Belgium if a number of American young women should attend the Normal Institute of Agricultural Home Economics in Laeken. It is also suggested that American agricultural colleges "exchange" students or teachers for a time with the Belgian Institute on a "living expense" basis.

The purpose of the Institute is to prepare young women for all phases of rural life. About half of the students' time is devoted to formal instruction and half to practical work. Anyone wishing to enter the institution may open negotiations through the Belgian Embassy in Washington. Under the present exchange rate it would be relatively inexpensive for American girls to take advantage of this opportunity.

[2] Sayre, L. E.: The Volatile Principles of Coffee. Bulletin of Pharmacy, July, 1916.

The school is in one of the suburbs of Brussels, in grounds that until recently formed part of the royal domain of Hosseghem and have been donated for their present purpose by the royal family. The Queen of the Belgians has been personally interested in the development of the school. Its director, Dr. Jean Lindemans, visited many agricultural colleges and home economics schools in the United States while the plans for the Laeken Institute were being developed.

## OPEN FORUM

**Establishing Standards in Practice Field Work in Training for Institutional Administration.** In following the development of courses in Institutional Administration in a growing number of colleges throughout the country, it is encouraging to find that, in probably every course offered, at least some provision has been made for giving the students practical experience in the field. We all appear to agree, therefore, that such practical experience is essential but it is quite evident that suitable standards have not yet been established and that much careful investigation must be carried on before this phase of the training will be organized in a comprehensive way. What standards should be set for the practice field by the institution? What type of supervision should be required? What order of processes is desirable in order that the practice work may have definite educational value? When should the practice work be given? Should the student receive college credit? Should she be paid? Should she begin work with the duties of a regular employee?

It is hoped that instructors and adminstrators in the hospital or business fields, who are training students, will use this section for the discussion of any phase of the subject.

—*The Editor.*

*A criticism of college trained women.* There is a fallacy, entertained by many so-called "practical" persons interested in large group living problems, that college trained women are not successful in this field of work, especially where the positions carry heavy executive duties and much business administration. Such a generalization is usually made from a limited personal experience and is entirely misleading. The principles back of administrative work demand more than a superficial knowledge of the fundamental sciences. Rarely does a rule-of-thumb worker make much progress in really constructive work, and, again, practice is kept safe and free from the danger of rule-of-thumb work by a constant infusion of science. We must admit, however, that there has been a tendency, in organizing special courses in institution administration, to rely far too strongly on theoretical knowledge, to delay educational activities of the work type as well as to create practice fields where experience is not gained under normal conditions. Technical knowledge can be put to really effective use only where activities take place normally and where the right kind of practical experience is provided.

*Present conditions in practice field work.* Students are at present often required to carry a somewhat heavy program of laboratory and class work while they are being given practical experience in the field. Under these conditions

they cannot well do justice to both types of work, especially when they transfer quickly from one type to the other. Again, limited experience in the college cafeteria is most inadequate. Large groups must be housed as well as fed, and students should come into very close touch with all phases of such institutional work. There is a growing feeling in favor of a plan which allows the student to spend her entire time on practice work during periods long enough to make her familiar with conditions in a particular field. It is also thought that she should begin this experience early in her training, so as to be able to interpret her class work more intelligently. Her first experience should, if possible, be gained within the college, where domitories and lunchrooms are available and where conditions can be carefully controlled. It is important, also, *that the college recognize this as a very important part of the training* and provide adequately for the supervision of this work. A busy director may have little time to give to these students and may not be able to adapt her organization to their special needs.

*Some practice field requirements.* It is wise to make quite definite the conditions under which all such practice work is carried on, when making arrangements for it either within or outside the college. The active coöperation of leaders in the field should be sought, and any institution in which the practice work is done should be approved by the college. It should represent good organization, adepuate systems of control, modern methods of business administration, and consideration for relative values. The director who supervises the work should be in close touch with the college and satisfactory arrangements should be made with reference to students' maintenance, hours of duty, supervision, and living conditions. A criticism of the students' work should be sent to the college at intervals. They should become familiar with systems of control and working conditions in storerooms, kitchens, serving rooms or serving counters, dining rooms, linen room and laundry, and with housekeeping methods in the general care of the house. They should also spend some time in the office observing business methods, including the buying of supplies, and assisting in record keeping and office routine.

*Students' responsibilities.* Students should be made fully aware of their responsibilities. They should earnestly endeavor to fit into the life of the institution, to prove adaptability for this type of work and to maintain high ethical standards. They should keep immaculate in appearance, with suitable uniforms, and have a purposeful and professional attitude toward their work. A careful report of all work done should be sent to the college by each student after being approved by the director.

*Some practice field problems.* College laboratory courses should give students a sound fundamental knowledge of good methods of work but the practice field should provide them with the opportunity for gaining a fair degree of skill in practical work, under conditions where emergencies are constantly arising. Facility in technique may be developed when the students are gaining

their first experience, probably as regular employees. They should learn to make accurate records of the work accomplished and in a short time to observe conditions beyond those of their immediate tasks.

It must be recognized, however, that administration is a function in itself and that the students are in training to become competent administrators and not skilled workers. If arrangements could be made to have them spend alternate semesters in the field during their junior and senior years, they should devote the greater part of the second semester of practice work to a study of managerial problems. While they are receiving intelligent supervision they should in turn be taught to supervise the work of others, to plan work for others, to inspect intelligently, to analyze conditions and make constructive criticism. Above all they should be assisted in studying general personnel problems and the psychology of directing workers as well as the conditions underlying the philosophy of management.

Some of this practice work may well be taken during part of the long summer vacations, thus reducing the time devoted to it during the regular sessions of the junior and senior years. The director or dietitian should not, however, arrange to leave inexperienced pupils in charge while she takes her vacation. This has been done but is obviously inadvisable. Practical experience intelligently supervised is a good test for the students' fitness for the work, and it will enable the college to judge the students' ability much more definitely. Some will no doubt fall by the wayside, but it is much better that they should find out their lack of ability for this particular type of work before the end of their college course, so that they may transfer to a more congenial field. On graduation they should be able to take an assistant's position instead of going out to gain a haphazard sort of experience in an unsupervised practice field.

KATHARINE FISHER,
*Teachers College.*

**An Inquiry.** "I should like suggestions from other teachers as to how they carry out their bread-making lessons. I find it most difficult to obtain satisfactory results, on account of having to hold back the bread or hurry its rising in order to have it ready when the class needs it."

R. G.

# BOOKS AND LITERATURE

*Spending the Family Income.* By S. AGNES DONHAM. Boston: Little, Brown & Co. 1921, pp. 174. $1.75.

In this book Miss Donham has given a clear, well designed presentation of the family budget, combining accuracy and suggestive definition with comprehensive outline so as to produce a valuable text and reference volume.

There is not only need but demand for books of this character, especially for those which deal with the basic study of home economics, that of the family budget. The teachers of this group of subjects often fail to see that the five divisions of the family income—shelter, operation, food, clothing, advancement—actually comprehend all they are to teach or present. So long as they fail to get this view they are apt to insufficiently relate the different activities, facts, theories, and principles, and the student becomes confused.

Housekeeping is often referred to as a series of unrelated tasks, but this is no more true of it than of any other large business. The business of living is a big business to which all of science and art contributes, yet it is after all a simple affair. We have to be sheltered, clothed, and fed. The better this is done, the better the result. For the business of facilitating exchange of goods we have selected a medium called money. It is through the wise, intelligent use of this that we are enabled to get life in greater abundance. Home economics aims to teach those factors which make intelligent choice possible.

*Spending the Family Income* conveys all this to us in a simple, direct, and satisfying way. It does not ignore the spiritual or ethical significance of right living or the right use of money, but it does give practical outlines and suggestions in such a way as to lead all who read the book toward a better understanding of the purpose and meaning of the family budget. It is a good text book, to be recommended to all who teach as well as to those homemakers who are seeking assistance in their household affairs.

The particular service that Miss Donham has rendered to home economics in the publication of this book is in simplifying a subject that occasionally causes trouble by its seeming intricacies. The making and adjusting of a budget is a simple matter. To teach the factors of choice or to learn relative values is a different thing involving knowledge of all those details which make up a long difficult course in household management. This is implied but the book deals simply and directly with the application of the principles of economics to the family income.

HELEN LOUISE JOHNSON.

*Women Professional Workers.* By ELIZABETH KEMPER ADAMS, PH.D. New York: The Macmillan Co., 1921, pp. 467. $2.50.

This welcome book is the last and most exhaustive of the series on "Vocations for the Trained Woman," begun in 1910 by the Women's Educational and Industrial Union of Boston. The enhanced importance of the work of trained women under war conditions, their appearance in "the unclassified twilight zone between the professions and the trades," where they demonstrated their competency, increased opportunity for training, all had made pre-war vocational studies entirely inadequate. Only one of Dr. Adams' scholarly mind and wide experience could have accomplished so well the task set of giving us a view of this new terrain now occupied by women workers. We have here descriptions of the new professions

which are attracting women, together with painstaking analyses of the duties connected with them. The very number of them tells the story of the desertion of older fields, notably teaching, by the more adventurous. Everywhere is the evidence of new interest groupings which mark the increased vocational self-consciousness among women.

The first chapters are given over to an illuminating study of the change in meaning of the term "professional," from its earlier and narrower application to a time when a worker is considered professional "who is equipped by ability, education, and experience to maintain and to improve standards of operation in the work in which she is engaged" (p. 7). Chapters V–VII describe the opportunities open to women specialists in health and hygiene, dietetics, and home economics. Chapter VIII is given over to community, civic, and government services; Chapter IX to social service. Chapters XI–XV, dealing with the emergence of women in the commercial and industrial world, could stand as an independent study. A selected and annotated reading list, with a good index, enhance the value of the book.

Dr. Adams' attitude toward the problem of marriage and the profession is refreshing: "It is no longer taken as a matter of course that women will entirely give up their professional work when they marry, and hence cannot expect to receive serious professional consideration. A growing number of professional married couples—most of them young—are working out the problem together, and making a genuine contribution to social adjustment" (p. 31). In fact, although one closes the book with the impression that it will be hard going for some time yet, the road is charted. Especially do we need a statistical semaphore to signal when enough workers have been turned into a vocational block. But later studies need only add to what Dr. Adams has so ably done.

IVA L. PETERS,
*Vocational Adviser, Goucher College.*

*Vocational Arithmetic for Girls.* By NETTIE STEWART DAVIS. Milwaukee: Bruce Publishing Company, 1920, pp. 137. $0.70.

Every teacher of a sewing trade discovers that her students are not able to apply the mathematical principles which they presumably know to the problems that arise in the trade instruction and that a thorough review of these principles with their application to the trade job on hand is necessary.

Text books offering such systematic review and at the same time good selections of pertinent problems are scarce, so that each new book that appears in this field is eagerly welcomed. A valuable addition to the list of available texts has been made by Nettie Stewart Davis, teacher of applied mathematics in the Milwaukee Trade School for Girls.

In this book, Mrs. Davis has, in a simple scientific way, given us the results of her years of experience in helping the trade school girl meet her difficulties. She has succeeded in doing two things which are not always successfully done. Her selection of problems compels a review of fractions, decimals, and percentage in such a logical way that the text can be followed even by the girls who have not completed grade work. In the mixed classes which make up the usual vocational or part time class, this is most important, as it is extremely disconcerting for the girl who is struggling to multiply $6\frac{1}{2}$ by $3\frac{1}{4}$ to find that the next problem involves decimals of which she has a very hazy memory left over from her last contact in her school years some time ago. The problems closely follow the order of "trade jobs" as given in most of the schools for the sewing trades, so that the teacher of applied mathematics will find this book a help and a guide in the arrangement of the problems which she must select from the work room, and of value in furnishing supplementary material upon which she can fall back for home work and class drill. Of course, no text book can be used by the real teacher of applied subjects to supplant the constant touch with the trade room.

The problems chosen are those that Mrs. Davis has found arising in the progress of the Milwaukee girls through the sewing and homemaking training which they receive in the Milwaukee school; and because the book is the product of actual experience and of expert selection and scientific arrangement it is a distinct contribution to the literature of the trade and vocational schools. It will be found helpful to any teacher struggling with the perplexing problem of getting enough material of the right kind for her classes in applied mathematics.

ELIZABETH M. FISH.

*The Delineator* has recently contained four articles from Dr. Bird T. Baldwin, Director of the Iowa Child Welfare Research Station. The Research Station was established as a part of the Iowa State University for the investigation of the best scientific methods of conserving and developing the normal child, the dissemination of such information acquired, and the training of students for future work. Dr. Baldwin has given to Delineator readers practical observations as a result of experimental work which will be of especial value to departments of home economics in which child welfare is considered.

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# NEWS FROM THE FIELD

## A SPECIAL TRAIN TO CORVALLIS!

### WILL YOU JOIN IT?

Since the appearance of the article in the February issue, the Transportation and Executive Committees, after conferring with a number of members in order to gain an idea of the preference in the matter of scenery en route, have definitely selected the Burlington Route from Chicago to St. Paul and the Great Northern Railway from St. Paul, via Glacier National Park and Seattle, to Corvallis, as the official route to the Annual meeting of the American Home Economics Association at Corvallis, Oregon, August 1 to 5, inclusive.

The Burlington is the natural route from Chicago to St. Paul–Minneapolis, since, for 300 miles, it follows the eastern shore of our great mid-continental stream—the Mississippi. For the most part, the rails are in sight of the Father of Waters—with the island dotted stream on the one side and a line of weather-worn limestone bluffs on the other side. There is a fascination about this beautiful waterway that lingers long after one has left its banks. In fact, a daylight ride along the upper reaches of the Mississippi is a rare travel treat.

The Great Northern Railway threads the lake and park region of Minnesota, one of the most beautiful sections of the United States, and traverses the Red River Valley, famous for its immense fields of wheat, to the thriving city of Grand Forks; thence straight across North Dakota, broad and level as the sea, to Devil's Lake, the largest body of water between the Great Lakes and the Rockies. Following the shifting Missouri through the fertile valley of the Milk River to a wealthy plains-and-cattle country, this line, in approaching the main range of the Rockies, affords to the tourist some of the grandest mountain and river scenery which America holds.

Glacier Park is the most talked of place in America by out-of-doors folk. Up there in the northern Rockies in northwestern Montana, there are 1500 square miles of breathing room, loafing space; endless forests, hundreds of sparkling streams meandering through valleys ablaze with vari-colored wild flowers and tumbling over foaming waterfalls feeding many rare and beautiful mountain lakes, while in the "high spots" there are eternal slow moving glaciers astride the pageant of carved and tinted peaks.

The plan is to spend two days in this "high" land and breathe the breezes quickened by the glaciers, flavored by the mountains and streams, and perfumed by the pines and flowers. If you are a fisherman, you'll enjoy battling with the cut-throat trout; if you are a hiker, there are no end of trails to follow—to your heart's content; if you like to ride, a sturdy little mountain pony will carry you over sky line trails over and along the Continental Divide.

West of Glacier Park, the Great Northern winds through and across the Rockies to Spokane which styles itself "the metropolis of the inland empire" and then strikes straight-away across the great wheat country to the valley of the Wenatchee, of apple fame; zig-zags across the evergreen covered mountains of the Cascade Range; and lets itself down to Puget Sound—often referred to as "the Mediterranean of America"—closely following the eastern shoreline to Seattle which Seattle-ites are pleased to term "the seaport of success." En route to Portland, the ride is an interesting one for the main down a fertile valley bordering on Puget Sound and between two rather widely separated mountain ranges.

The present plan is to leave Chicago at 10:00 A.M. on Wednesday, July 26, and arrive Glacier Park at 8:00 A.M. on the morning of Friday, the 28th. The itinerary for the two days in the park is: leave Glacier Park Hotel by auto 8:00 A.M., Friday morning, arriving Many Glacier Hotel at 12:45 for luncheon. For the afternoon, a choice of a hike or saddle horse trip to Iceberg Lake and return, taking dinner and lodging at Many Glacier Hotel. On the twenty-ninth, leave Many Glacier Hotel at 8:00 A.M. by auto, arrive St. Mary's at 9:45 A.M.; leave St. Mary's via launch at 10:30 A.M., arrive Going-to-the-Sun Chalêts at noon for luncheon; leave at 2:00 P.M., reaching Glacier Park Hotel at 5:30 P.M. and, after dinner and a short rest, leave for the West. The daylight ride from Spokane to Seattle is one long to be remembered. Arriving Seattle at 8:00 P.M. on Sunday, there would be time for "a trip about town" and the journey to Portland before 8:00 A.M. the next morning.

The cost of the trip from Chicago, including round trip railroad fare, sleeper ticket from Chicago to Portland, including stop overs, meals en route, and the expense of the two-day side trip in Glacier Park is estimated at approximately $170 per person. This figure is based on railroad fares in effect during 1921. The rates to be effective for 1922 will be no higher and probably will be lower. The expense to be added for the return journey will depend, of course, largely upon the route selected by the members, the stop overs made, length of stay, and so forth.

Members who may find it more convenient to pass through St. Louis, Kansas City, or Denver, instead of Chicago, may have the option of joining our party at St. Paul or may take advantage of the through sleeping car service offered by the Burlington Route direct via the Big Horn Mountains of Wyoming, the Custer Battlefield, and Great Falls, and meet with the main party upon arrival at Glacier Park.

The advantage of traveling in a special train is obvious. Aside from enjoyment of special service all along the line, there is an unexcelled opportunity to make new acquaintances and renew old acquaintances as well as to discuss Association matters before our arrival at the convention city.

Further details bearing on the trip, will be announced from time to time.

Any communications or requests for information should be addressed to the Chairman of the Travel Committee, Miss Nina Streeter, 1370 East 54th St., Chicago.

**The National Society for Vocational Education** held its fifteenth annual convention, January 5–7, 1922, in Kansas City, Missouri. The Section on Homemaking Education presented an excellent program and was well attended. Margaret Johnston, State Supervisor of Wisconsin, was elected chairman of the Section for next year, and Jessie Harris, State Supervisor of Texas, was appointed a member of the executive committee. Among a number of resolutions passed by the national organization was the following:

WHEREAS, This Society recognizes the importance of training in vocational home economics and realizes that more funds must be provided for the States to stimulate this work, be it

*Resolved*, That (1) We reaffirm our endorsement of the Fess Home Economics Bill. (2) We urge that a committee be appointed to coöperate with similar committees appointed by the State Directors and other organizations pushing this bill. (3) We recommend that as soon as possible a representative of this committee confer with the members of the Educational Committees of the National Congress as to the advisability of reintroducing this bill and the best methods of promoting its passage so that funds will be available for this work during 1922–23.

**Vocational Conferences.** In attendance at the two regional conferences called by the Federal Board for Vocational Education were the state supervisors, the administrative heads of the home economics departments, and the women in charge of teacher-training in colleges in the states of

the Southern and Eastern regions. The Eastern region comprises New England, New York, Pennsylvania, New Jersey, Delaware, Maryland, West Virginia, and Ohio. This conference was held Dec. 19–21, 1921, in New York City. The Southern region is made up of the ten southern states. This conference was held Jan. 9–12, in New Orleans.

**Public Health Service Institutes.** In order to meet the insistent nation-wide demand, the Public Health Service arranged a series of Institutes to be held in the larger widely scattered cities of the United States. These began with Hot Springs, Ark., in November, and have been held in New Orleans, Columbia, S. C., Dallas, Tex., Birmingham, Ala., Memphis, Louisville, Indianapolis, Pittsburgh, Cleveland, Lansing, Mich., Chicago, Minneapolis. Other cities and dates so far listed are as follows: Portland, Oreg., and Kansas City, Kans., April 10–15; Spokane, Wash., and Newark, N. J., April 17–22; Helena, Mont., and Albany, N. Y., April 24–29; Denver, May 1–6; Washington, D. C., late in May. Some dates in the schedule remain vacant, and these are being rapidly allotted.

The Institutes were planned to run for a week. The basic courses include from three to six lectures on tuberculosis, child hygiene, nutrition, clinics, and health centers, communicable diseases, non-communicable diseases, industrial hygiene, sanitary engineering, administrative problems, mental hygiene, medical social work, syphilis, gonorrhea, protective social work, and the delinquent. Single lectures are also given on special occasions.

**Construction for Housing.** There was a decided increase in the construction of dwelling houses in this country during the first ten months of 1921, according to information obtained by the Civic Development Department of the Chamber of Commerce of the United States. Construction figures, furnished by forty-four important cities, show that during the period from January to October, 1921, about $603,000,000 went into new construction, while during all 1920 the total in the same cities was only $8,000,000 more. During the shorter period in 1921, 57.9 per cent of the total was for dwelling houses as against only 36.1 per cent in 1920.

### IOWA

**The Iowa Home Economics Association** held its Eighth Annual Meeting in Des Moines, November 3rd and 4th, Mrs. Helen Wagner, Supervisor of Home Economics, Des Moines, presiding. The Association has a membership of one hundred fourty-eight. The secretary is Lillis Knappenberger, Iowa State College.

The program was as follows: Recent Research in Nutrition, Dr. Ruth Wheeler, Professor of Nutrition, Medical College, State University of Iowa; Nutrition Classes for Children, Dr. Caroline B. Hedger of the Elizabeth McCormick Memorial of Chicago; School Projects in Home Economics, Helen Goodspeed, former Supervisor of Home Economics in Wisconsin, and Julia Hurd of Iowa State College. The Des Moines school children, under the direction of Ella Langenberg, of the Abbott Educational Company, presented a playlet, "Color in Dress."

A tribute was paid to the memory of Dean Catharine MacKay, who was largely responsible for forming the association. She served as secretary, as president, as chairman of its most important committees. Every teacher of home economics in Iowa has felt the magnetism of her personality, her earnestness, and her enthusiasm. They have served their communities better because of her inspiration, her fine conception of service.

**A Memorial Service** was held for Dean Catharine J. MacKay on December 18, 1921. Brief addresses were given by some of the women closely connected with her in various lines of work—Mrs. James A. Devitt, a member of the State Board of Education, Flora Dunlap of the Roadside Settlement, Des Moines, and Mrs. Cora Whitley, Chairman of the State Council of National Defense. Louise Wiese, President of the Woman's Guild, represented the student

body, and Acting Dean Walls, Dean Curtis, and President Pearson spoke for the faculty. Plans were announced concerning a permanent memorial in the form of a student loan fund or scholarship.

**Club News.** Iowa sent thirty-seven girls and leaders to the International Stock Show in Chicago. In 1920, 33⅓ per cent of the Iowa group represented home economics projects, while in 1921, 80$\frac{7}{16}$ per cent represented home projects. This shows a remarkable growth in this line of club work. Iowa girls at the show put on demonstrations in house furnishing, labor saving devices, garment work, canning of meats, uses of dried fruits, and table setting.

Boys and girls club work took on a new aspect when the national committee, composed of prominent business men, announced that G. L. Noble had been appointed national secretary. Mr. Noble, with headquarters in Chicago, will devote his entire time to furthering the interest of junior work in coöperation with agricultural extension forces. Mr. Noble had charge of the 560 champion boys and girls who had been awarded trips to the International from 26 states and Ontario, and he planned for them a real educational week, with visits to Field Museum, Art Institute, Swifts, Amour's, and the Wilson packing plants, International Harvester Company, Chicago Board of Trade, and Marshall Fields, as well as to the Stock Show itself.

At the big club rally, secretary of Agriculture Wallace, J. W. Coverdale of the American Farm Bureau Federation, George Farrell of Washington, and representatives of the Chicago Association of Commerce were guests.

**The annual meeting of the County Agents,** Home Demonstration Agents, Club Agents, and Extension Specialists was held at Iowa State College, November 15–18, 1921. The first meetings were given over to reports, plans for new work, discussion of weak points, and methods of strengthening the work. Community program development was emphasized. Dr. Caroline Hedger, of the Elizabeth McCormick Memorial, Chicago, spoke on "Some Interesting Phases of Nutrition Work" to the Home Demonstration Agents, and later addressed a general meeting on "The Farm Bureau in Relation to Public Health." Later discussions covered the training schools in leadership established for farm bureau women, the teaching of food values, a summary of the new home management project, the refinishing of furniture project, plans for Girls' Club work, and the work at the state fair.

### KANSAS

**Teachers Meetings.** Four state meetings of teachers of home economics were held in Kansas in November—one at Topeka, at the time of the annual meeting of the State Teachers Association, another at Hays, the third at Wichita, the fourth at Pittsburg. The subjects for discussion were the linking of the home economics work in the schools with the home, legislation affecting home economics, newer aspects of nutrition, and the commercial possibilities of home economics training.

**Kansas State Agricultural College.** Nina B. Crigler (A.M. Columbia University) has been appointed State Home Demonstration Leader at the Kansas State Agriculture College. Miss Crigler has been a member of the staff at the University of Illinois both as a teacher and in extension service. She has also served in the California Normal College, Santa Barbara, College of Industrial Arts, Denton, Texas, and as Home Economics Supervisor in Texas.

Dr. L. Jean Bogert, Professor of Food Economics and Nutrition, presented a paper on Methods of Teaching Applied Sciences to Home Economics Students in Vocational High Schools at the meeting of the National Society for Vocational Education held in Kansas City, Mo., January 5 to 7, 1922.

### MARYLAND

**The Home Economics Section** of the State Teachers Association of Maryland held its sixth annual meeting November 26, 1921, at the Western High School, Baltimore, with the president, Elizabeth Swick, presiding.

Venia M. Kellar, State Home Demonstration Leader, explained the policies of the

Extension Department of the University of Maryland. Pearl MacDonald, Professor of Home Economics Extension, State College, Pa., impressed upon home economics workers their responsibility for developing home making as a fine art. Dr. C. F. Langworthy reported several phases of work now carried on in the Office of Home Economics, U. S. Dept. of Agriculture, and illustrated this work by food charts, and samples of repair work in clothing and home furnishings.

The question of affiliation was presented by Keturah Baldwin and emphasized by Anna Richardson and Mrs. Calvin. The Section voted to become a state association and to affiliate with the American Home Economics Association. The following officers were elected: President, Frances Zuill, Supervisor of H. E., Baltimore City Schools; Vice-President, Mabel Stevenson; Secretary, Miss Troy; Treasurer, Corrinne Hibbard.

The state members and the guests were entertained at dinner by the Baltimore Home Economics Association.

**The Program of the Baltimore Home Economics Association** for January was in charge of Mrs. Agnes O'Dea, Head Dietitian, Johns Hopkins Hospital. Mrs. O'Dea and her staff entertained the Association at the Hospital and arranged for the discussion of Dietitians' problems as follows: Social Service in Hospitals, Esther Wright, Johns Hopkins Hospital; Feeding Ex-Service Men, Ruth Gubtel, U. S. Public Health Service Hospital, Fort McHenry; Purchasing and Preparing Food for a Hospital, Florence Nolan, University of Maryland Hospital.

A tour through the kitchens and supply rooms gave an opportunity to see modern equipment and to observe the efficient service of the Dietary Department under the direction of Mrs. O'Dea.

NEW YORK

**The Sewing Exhibit** of the Domestic Art Department of the Buffalo Public Schools, held in connection with the New York State Teachers Association convention, was really a sewing exhibit without sewing. All types of work from the fifth grade through high school were shown, together with the tools and paraphernalia used, such as charts, mounted specimens of raw materials, framed collections of processes of manufacture of tools and materials, and posters of all kinds. These devices form a collection used as a circulating library by teachers of domestic art who borrow these charts or exhibits for use in connection with their regular work.

The exhibit was divided into several sections as follows: raw materials and processes of manufacture; the tools used in working and labor-saving devices; actual articles made by the pupils showing the types of work done in all grades; health charts and posters; and various phases of the development of the home.

The section devoted to raw materials and processes of manufacture consisted of charts, mounted exhibits in separate cases showing the four fibers commonly used in all stages of preparation for use as finished products. There were mounted exhibits of pins, needles, hooks and eyes, thimbles, scissors, emery and carborundum, and buttons, showing each step in the manufacture of each of these necessities.

The exhibit of tools and labor-saving devices included a model loom made in the manual training departments of the Buffalo Public Schools; the various types of flat irons from the old sad iron to the latest models of electric irons, including the recently invented Tommy iron used in millinery; standard sewing machines, motor attachments, and electric portable machines; measuring devices; a well equipped box for teacher's supplies for ordinary class work; a pupil's supply box, a sewing bag, and a small suit case used by the older girls for carrying home project work.

In each grade exhibit, there were working models of projects for that year; for example, a 9th grade middy blouse showing all processes of construction.

A special exhibit on hygiene illustrated the use of posters, mottoes, drawings, and quotations in emphasizing the necessity for recreation, rest, exercise, diet, and cleanliness in persons and belongings. Most of these were made by teachers, but many posters on health were furnished by the

National Child Welfare Association of New York.

One of the unique features was an exhibit, showing the development of the house from the primitive to the modern dwelling, and including the tree house, the mud hut, the stone house, the cliff dwelling, and the log cabin. Drawings, scrap books, photographs, magazines, and bulletins showed the different types of modern homes.

The book collection showed good publications on all phases of home economics. These books are used by both day and evening teachers.

The exhibit was the work of Laura M. Weisner, Director of Domestic Art, and her assistant, Helen W. Jaeger.

**Summer Courses.** There will be offered, in the summer session (July 10–August 18) of Columbia University at Teachers College, a six point practicum course entitled "Vocational Homemaking: Construction of Courses for Schools and Teacher Training Agencies". Dr. David Snedden, Professor of Vocational Education and Educational Sociology will administer the course, aided by Professors Cooley, Marshall, Sophr, and Winchell in Home Economics.

The course is designed especially for supervisors of teachers and trainers of teachers. Chief attention will be given to studies of social needs and educational aims in the general field, but studies of new problems of method—home projects, practice housework, coöperative residence work, and the like—may be undertaken if desired by individual students. Address all correspondence, relative to admission, to Dr. David Snedden, Teachers College, Columbia University, New York City.

**The Junior Red Cross** has established a $5,000 fund to aid parents in buying glasses for their children. Already 200 children have been given "new eyes", according to a report issued by a local chapter of the Red Cross. The fund is self-sustaining, in that the children pay back the cost of their glasses on the installment plan.

**Own Your Own Home Exposition.**—The Executive Committee of the Fourth Annual Own Your Home Exposition has announced that the show will be held in the 69th Regiment Armory, New York City, April 22 to 30. This committee represents the architectural, real estate, lumber, and paint interests, the savings and loan associations, and the development and sales companies.

A committee has also been formed to aid in directing the Exposition to be held in Chicago in March. This committee will stimulate the "Own Your Home Movement" nationally and will be ready to coöperate with communities anxious to follow the advice of President Harding's Conference on Unemployment which went on record at Washington as urging a national revival of the building industry. At that time the Conference issued the statement that the greatest area of relief of the unemployment situation lay in the construction of more homes. There is a country-wide trend toward home building because of the reduction of building costs over previous building costs.

OHIO

**The Ohio Home Economics Association** held its winter meeting Wednesday, December 28, 1921, in Columbus, in conjunction with the Ohio State Teachers Association. The meeting was called to order by Mrs. Blanche B. Bowers, President.

At the morning session, Professor J. F. Lyman, of Ohio State University gave a lecture on "Recent Developments in Human Nutrition." Dr. Hopkins, Medical Advisor of the Columbus public schools, summarized the work being done by the penny lunches through the agency of the Parent-Teachers Association. Lucia Johnson, Director of Child Welfare, Ohio Institute of Public Efficiency, spoke on "Woman's Part in Policies, Politics, and Progress." Faith R. Lanman, Head of the Home Economics Department, Ohio State University, outlined the work being done to encourage the use of Ohio wheat. Mary Sweeny, President of the American Home Economics Association, addressed the group on the "Professional Responsibilities and Opportunities of Home Economics Women."

At the business session it was voted to adopt the constitution as reported by the

constitutional committee, and to affiliate with the American Home Economics Association.

WEST VIRGINIA

**The Home Economics Section** of the Vocational Education Society of West Virginia met in Huntington in November 1921. Isabella Wilson of Marshall College was elected chairman for the next year, and Eloise Thornburg of Huntington High School was continued as Secretary.

WISCONSIN

**The School Bacteriologist.** In order to meet emergencies for the protection of children against diphtheria the Board of Health, Shorewood, Milwaukee, has launched an experiment to demonstrate, if possible, that the small community need not continue in its present position of utter helplessness. The home economics teacher, supplementing her college course by a short, intensive course of training in the laboratory of a city health department, will become also the school bacteriologist. Cultures from the promiscuous sore throats will be given to her for examination.

Agnes Olson, a graduate of the University of Illinois and an experienced teacher of home economics, has been engaged to undertake this work in the schools of Shorewood.

NOTES

**Emma H. Gunther** and **Lydia Ray Balderston** of Teachers College sailed on the S. S. Golden State, January fourteenth, to spend the spring in China and Japan. Their itinerary will include Honolulu and Manila. The greater part of the time will be spent in Canton, Peking, Shanghai, and Nanking.

**Minna C. Denton,** Assistant Chief of the Office of Home Economics, U. S. Dept. of Agriculture, visited Teachers College in December and spoke to the classes regarding the work of that office.

**Susan Blakey,** Department of Home Economics, University of Missouri, was married December 27 to Dr. Colin Goodykoontz of Boulder, Colorado.

**Lorraine Steer,** formerly of the University of Missouri, and later an instructor at the University of Arkansas, was married January 12 to Rex Hayes of Chicago.

**The University of Missouri** has received a bequest of $50,000 from the estate of the late J. K. Gwinn, for the erection of a home economics building in memory of his wife, a former student. The money will be used for the enlargement of the present building which will be called the Marie Louise Gwinn building.

**The Western Arts Association** will meet in Cincinnati May 2–5. All who are interested in arts, industrial arts, or household arts, are urged to attend this convention.

FOREIGN

**Nursery Schools** have been developed in England, within the last three years as a part of the general educational system. The purpose of these schools may be said to be somewhat wider in scope than that of the American Kindergarten, as they are institutions "providing for the care and training of young children aged from two to five years, whose attendance at such a day school is necessary or desirable for their healthy physical and mental development. Such a school has, therefore, a twofold function: first, the close personal care and medical supervision of the individual child, involving provision for its comfort, rest, and suitable nourishment; and second, definite training—bodily, mental, and social—involving the cultivation of good habits in the widest sense, under the guidance and oversight of a skilled and intelligent leader, and the orderly association of children of various ages in common games and occupations."

Of the twenty-six schools in operation, eight are in London. Unfortunately a shortage of funds has hindered the development of the schools, and many of those now in existence are financed wholly or in part by private funds. One, in London, is entirely supported by the London County Council.

In no case does there seem to be any idea of using the Nursery Schools as laboratories, except for the training of teachers. However

there are regular training schools for nursery school teachers. Two particularly interesting ones are the Gipsy-Hill Training College in London, under the direction of Miss De Lissa, and the Manchester College for Teachers, under the direction of Miss Grace Owen. Miss Owen has written a book called "Nursery School Education" which was reviewed in the JOURNAL for August, 1921.

**A Degree in Household Science.** The only college in great Britain which offers a degree in household science is the King's College for Women of the University of London, of which Dr. Janet Lane-Claypon is the director. It takes three years to complete the course and many of the graduates go into the teaching field, though some are employed as directors and cooks in institutional kitchens. There is some discussion regarding the possibility of the Edinburgh School of Cookery and Domestic Science installing such a course in the University of Edinburgh. Miss E. D. LaCour is principal of the Edinburgh school. She is interested in securing information regarding the preparation and content of courses of college grade.

In general the courses offered in the institutes and training schools of Great Britain are intended for teachers, and the practical side rather than the more theoretical side is emphasized.

**Health Visitors.** In England the interest in health and health education brought about by the war has resulted in the development of courses designed for so-called Health Visitors, who resemble in some ways our Public Health Nurses. They receive a training which is made up of a study of the theory of nursing and social science combined with some food work—such a course as might be given to a Visiting Housekeeper. Health Visitors also have some practical experience in infant welfare centers and similar institutions before they are graduated. One of the best examples of this kind of course is that given at the Battersea Polytechnique Institute, under the direction of Miss Biddeleux.

**The International Federation of University Women,** with which the American Association of University Women is affiliated, has its headquarters in London, and Miss Theodora Bosanquet not only is secretary of the English organization but represents the International Federation as well. Through Miss Bosanquet, who has established connections with members of various institutions, college women from the United States or other countries are enabled to visit any of the universities and colleges in England. Letters of introduction supplied by Miss Bosanquet insure visitors receiving every attention.

**Continuation Work.** Visitors in London who are interested in continuation work should get in communication with Miss C. R. Gordon, of the London County Council, Educational Offices, Victoria Embankment. The most interesting phase of the work as developed at present is that carried on in the evening schools for women.

**A Conference on Infant Welfare** was held in London July 5 to 9 under the direction of Miss J. Halford, secretary of the National League for Health, Maternity, and Child Welfare. This conference included many visitors from outside England. The published report may now be obtained from the office of the League, 4 Tavistock Square, London, W. C. 1.

**A Child Welfare Conference** which was supposed to be international in scope was held in Brussels July 18 to 21. It was attended by representatives from various countries. The attendance was rigidly limited to persons authorized by various governments, who were, in the majority of cases, officials. The conference was conducted in French.